# 02.04 - STRUCTURAL
## INDEX OF DRAWINGS

| DRAWING NUMBER | DRAWING TITLE | DRAWING NUMBER | DRAWING TITLE |
|---|---|---|---|
| S-01 | STRUCTURAL INDEX OF DRAWINGS | S-21 | EXPANSION BEARING REPLACEMENT - 2 |
| S-02 | GENERAL PLAN AND ELEVATION | S-22 | TEMPORARY SUPPORT OF STRUCTURE - 1 |
| S-03 | TYPICAL SECTION AND NOTES | S-23 | TEMPORARY SUPPORT OF STRUCTURE - 2 |
| S-04 | SUBSTRUCTURE REPAIR - ABUTMENTS | S-24 | DECK PATCHING PLAN - 1 |
| S-05 | SUBSTRUCTURE REPAIR - RETAINING WALLS | S-25 | DECK PATCHING PLAN - 2 |
| S-06 | SUBSTRUCTURE REPAIR - PIERS NO. EB1 & 2 | S-26 | DECK UNDERSIDE PATCHING PLAN - 1 |
| S-07 | SUBSTRUCTURE REPAIR - PIERS NO. EB3 & 4 | S-27 | DECK UNDERSIDE PATCHING PLAN - 2 |
| S-08 | SUBSTRUCTURE REPAIR - PIERS NO. EB5 & 6 | S-28 | DECK REPAIR DETAILS |
| S-09 | SUBSTRUCTURE REPAIR - PIERS NO. EB7 & 8 | S-29 | DECK JOINT SEAL DETAILS - 1 |
| S-10 | SUBSTRUCTURE REPAIR - PIER NO. EB9 | S-30 | DECK JOINT SEAL DETAILS - 2 |
| S-11 | SUBSTRUCTURE REPAIR - DETAILS 1 | S-31 | DECK END REPAIR DETAILS - 1 |
| S-12 | SUBSTRUCTURE REPAIR - DETAILS 2 | S-32 | DECK END REPAIR DETAILS - 2 |
| S-13 | KEEPER BLOCK DETAILS - 1 | S-33 | PARAPET RETROFIT |
| S-14 | KEEPER BLOCK DETAILS - 2 | S-34 | PARAPET TRANSITION DETAILS - 1 |
| S-15 | FRAMING PLAN - 1 | S-35 | PARAPET TRANSITION DETAILS - 2 |
| S-16 | FRAMING PLAN - 2 | S-36 | MISCELLANEOUS DETAILS |
| S-17 | STRUCTURAL STEEL REPAIRS - 1 | S-37 | DRAINAGE REPAIR PLAN AND DETAILS |
| S-18 | STRUCTURAL STEEL REPAIRS - 2 | S-38 | PAINTING AND CONTAINMENT |
| S-19 | STRUCTURAL STEEL REPAIRS - 3 | S-39 | LIGHT STANDARD ANCHORAGE ADAPTER |
| S-20 | EXPANSION BEARING REPLACEMENT - 1 | S-40 | PARAPET MOUNTED SIGN SUPPORT |

DESIGNED BY:
HARDESTY & HANOVER, LLC
NEW HAVEN, CT

STATE OF CONNECTICUT · STEVEN D. HARLACKER · No. 22034 · REGISTERED PROFESSIONAL ENGINEER

Steven D Harlacker
2016.08.10
09:52:43-04'00'

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Structural Index.dgn

SIGNATURE/ BLOCK:

STATE OF CONNECTICUT · STEVEN D. HARLACKER · No. 22034 · REGISTERED PROFESSIONAL ENGINEER

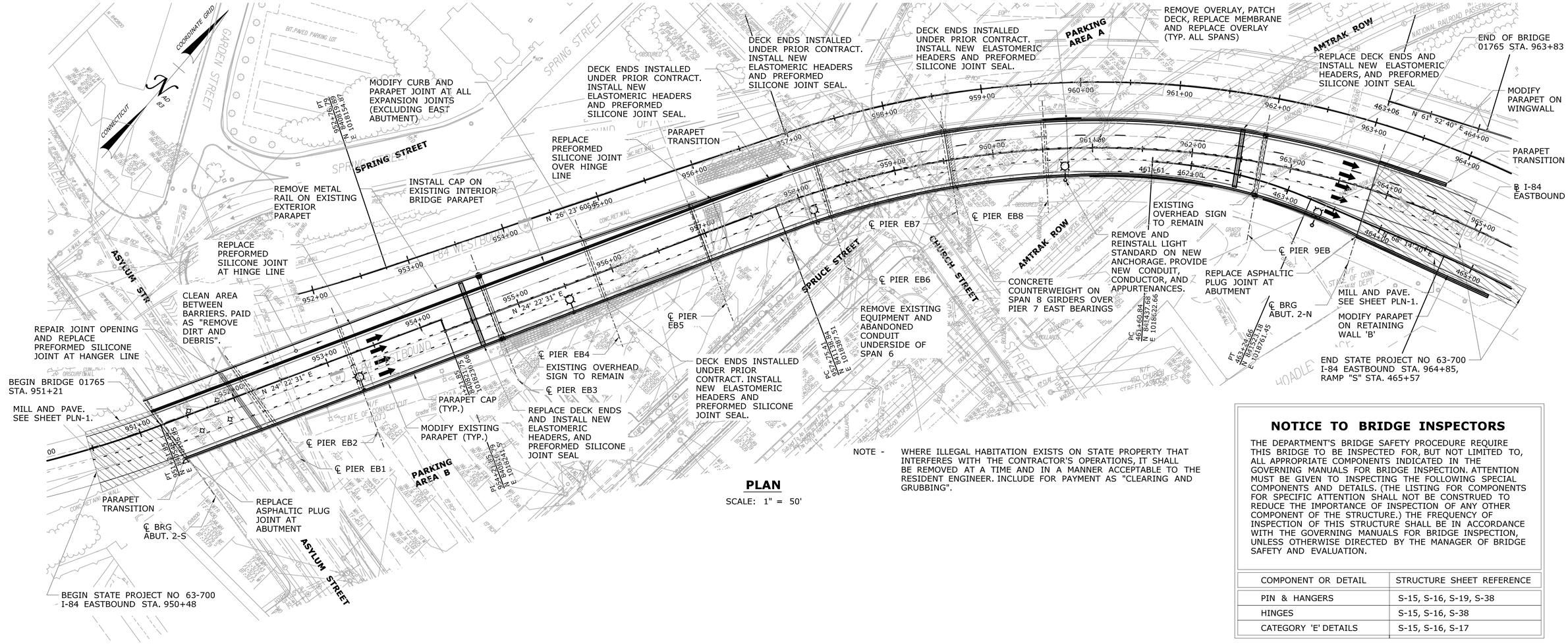
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD

DRAWING TITLE: STRUCTURAL INDEX OF DRAWINGS

PROJECT NO. 63-700
DRAWING NO. S-01
SHEET NO. 02.04.01




## PLAN

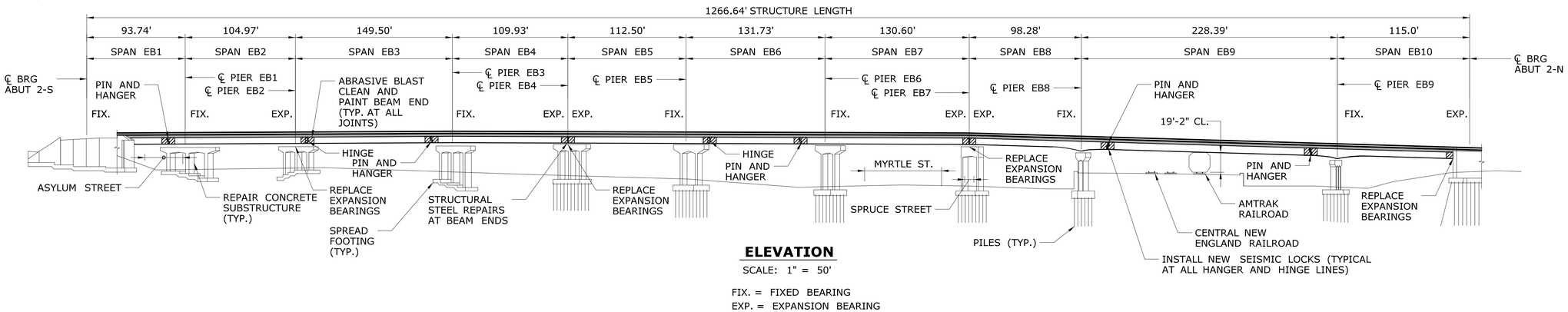
SCALE: 1" = 50'

NOTE - WHERE ILLEGAL HABITATION EXISTS ON STATE PROPERTY THAT INTERFERES WITH THE CONTRACTOR'S OPERATIONS, IT SHALL BE REMOVED AT A TIME AND IN A MANNER ACCEPTABLE TO THE RESIDENT ENGINEER. INCLUDE FOR PAYMENT AS "CLEARING AND GRUBBING".

## NOTICE TO BRIDGE INSPECTORS

THE DEPARTMENT'S BRIDGE SAFETY PROCEDURE REQUIRE THIS BRIDGE TO BE INSPECTED FOR, BUT NOT LIMITED TO, ALL APPROPRIATE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING FOR COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF INSPECTION OF ANY OTHER COMPONENT OF THE STRUCTURE.) THE FREQUENCY OF INSPECTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE GOVERNING MANUALS FOR BRIDGE INSPECTION, UNLESS OTHERWISE DIRECTED BY THE MANAGER OF BRIDGE SAFETY AND EVALUATION.

| COMPONENT OR DETAIL | STRUCTURE SHEET REFERENCE |
|---|---|
| PIN & HANGERS | S-15, S-16, S-19, S-38 |
| HINGES | S-15, S-16, S-38 |
| CATEGORY 'E' DETAILS | S-15, S-16, S-17 |




## ELEVATION

SCALE: 1" = 50'

FIX. = FIXED BEARING
EXP. = EXPANSION BEARING

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 GeneralPlanElevation.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:

# REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD

DRAWING TITLE: GENERAL PLAN AND ELEVATION

PROJECT NO. 63-700
DRAWING NO. S-02
SHEET NO. 02.04.02

## QUANTITIES

| ITEM | UNIT | TOTAL |
|---|---|---|
| BIRD SPIKE | LF | 3366 |
| REMOVE DIRT & DEBRIS | ls | 1 |
| SURFACE PATCH (TEMPORARY) | SF | 880 |
| JACKING FOR BEARING REPLACEMENT | EA | 54 |
| CLEAN EXISTING SCUPPERS | EA | 15 |
| MODIFY SCUPPER | EA | 15 |
| EXTEND EXISTING WEEPHOLES | EA | 10 |
| REMOVAL OF EXISTING BRIDGE DRAINAGE SYSTEM | LS | 1 |
| 8" PIPE FOR BRIDGE DRAINAGE- (FIBERGLASS) | LF | 30 |
| ELASTOMERIC CONCRETE HEADERS | CF | 103 |
| ASPHALTIC PLUG EXPANSION JOINT SYSTEM | CF | 58 |
| PREFORMED JOINT SEAL | LF | 553 |
| BEARING REPLACEMENT WITH ELASTOMERIC BEARING PADS | EA | 54 |
| MODIFY BRIDGE PARAPET | LF | 2050 |
| BRIDGE PARAPET CAP | LF | 2725 |
| CLASS "S" CONCRETE | CY | 20 |
| CLASS "F" CONCRETE | CY | 28 |
| FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE) | CY | 175 |
| PARTIAL DEPTH PATCH | CF | 5680 |
| EPOXY INJECTION CRACK REPAIR | LF | 101 |
| DEFORMED STEEL BARS | LB | 3000 |
| DOWEL BAR SPLICER SYSTEM | EA | 200 |
| DRILLING HOLES AND GROUTING DOWELS | EA | 365 |
| CLEAN AND COAT EXPOSED REINFORCING STEEL | LF | 13725 |
| STRUCTURAL STEEL REPAIRS (SITE NO. 2) | CWT | 563 |
| TEMPORARY SUPPORT ASSEMBLY | EA | 54 |
| ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 2) | LS | 1 |
| REPAIR DAMAGED GIRDER | LS | 1 |
| CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE #2) | LS | 1 |
| EMBEDDED GALVANIC ANODES | EA | 285 |
| LOCALIZED PAINT REMOVAL & FIELD PAINTING OF EXISTING STEEL | SF | 950 |
| MEMBRANE WATERPROOFING (WOVEN GLASS FABRIC) | SY | 8700 |

## QUANTITIES

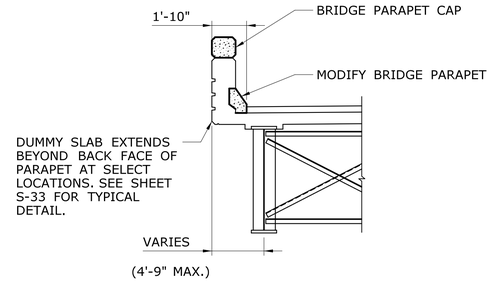
| ITEM | UNIT | TOTAL |
|---|---|---|
| RESET CONCRETE CURBING | LF | 40 |
| PROTECTIVE COMPOUND FOR BRIDGES | SY | 85 |
| REMOVAL OF EXISTING METAL BRIDGE RAIL | L.F. | 710 |
| CONCRETE HAUNCH REMOVAL | LF | 1530 |
| TRENCHING AND BACKFILLING | FT | 50 |
| LIGHT STANDARD ANCHORAGE | EA | 5 |
| REMOVE AND REINSTALL LIGHT STANDARD | EA | 5 |
| UNDERBRIDGE LUMINAIRE - LED (PENDANT MOUNTED) | EA | 4 |
| REMOVE UNDERBRIDGE LUMINAIRE | EA | 4 |
| 2" FIBERGLASS CONDUIT - SURFACE MOUNTED | EA | 1600 |
| 2" FIBERGLASS CONDUIT IN TRENCH | EA | 50 |
| REMOVE CONDUIT | LF | 250 |
| 16"X14"X6" NEMA 4X NON-METALLIC JUNCTION BOX | LF | 7 |
| NO. 2 SINGLE CONDUCTOR | LF | 5300 |
| 1/2" LIQUID TIGHT FLEXIBLE METAL CONDUIT | EA | 30 |
| NO. 8 BARE COPPER GROUNDING CONDUCTOR | LF | 1800 |
| REMOVAL OF EXISTING EQUIPMENT | LF | 1 |
| PARAPET MOUNTED SIGN SUPPORT | LF | 1 |

## CONCRETE DISTRIBUTION

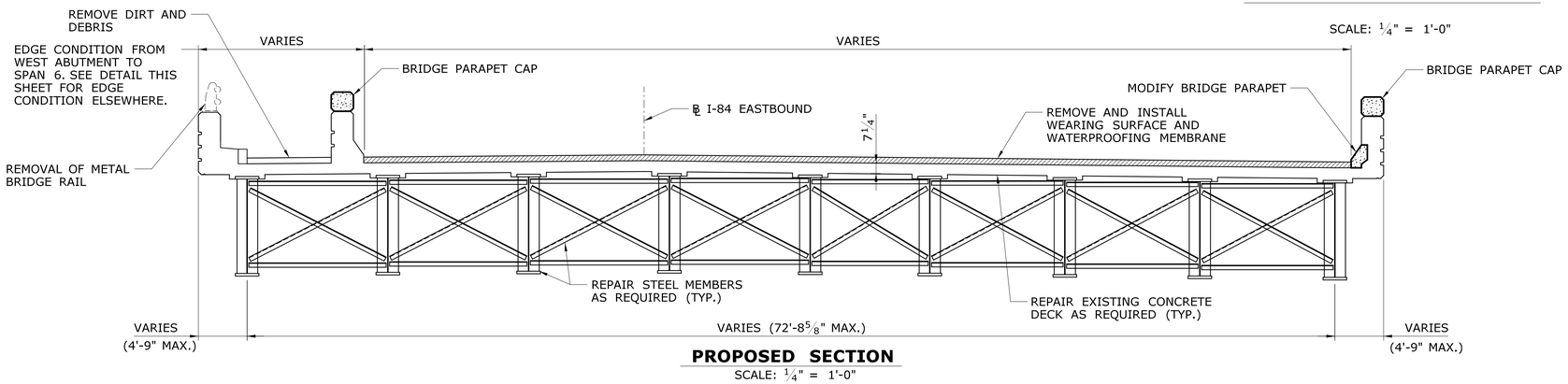
| | | |
|---|---|---|
| SUPERSTRUCTURE | C.Y. | 394 |
| SUBSTRUCTURE | C.Y. | 40 |
| TOTAL | C.Y. | 434 |

## INSPECTION OF FIELD WELDS

| METHOD | UNIT | QUANTITY |
|---|---|---|
| ULTRASONIC (UT) | L.F. | -- |
| MAGNETIC PARTICLE (MT) | L.F. | 210 |




**BARRIER CONDITION**
**SPAN 6 - EAST ABUTMENT**
SCALE: 1/4" = 1'-0"




**PROPOSED SECTION**
SCALE: 1/4" = 1'-0"

## GENERAL NOTES:

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (CONNDOT FORM 816, 2004), SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2016, AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2012 6TH EDITION AND AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003) WITH REVISIONS DATED 2011.

BASIC ALLOWABLE DESIGN STRESSES:

| | |
|---|---|
| CLASS 'F' CONCRETE BASED ON | f'c = 4,000 PSI |
| CLASS 'S' CONCRETE BASED ON | f'c = 3,000 PSI |
| REINFORCEMENT (ASTM A615 GRADE 60) | fy = 60,000 PSI |
| STRUCTURAL STEEL (ASTM A709, GRADE 50 T2) | fy = 50,000 PSI |

THE SPECIFIED CONCRETE STRENGTH USED IN DESIGN, f'c, OF CONCRETE COMPONENTS IS NOTED ABOVE. THE MINIMUM COMPRESSIVE STRENGTH OF CONCRETE IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF "SECTION 6.01 CONCRETE FOR STRUCTURES".

LIVE LOAD: HL-93

FUTURE PAVING ALLOWANCE: NONE

STRUCTURAL STEEL: SEE DWG. NO. S-15 AND S-16 FOR EXISTING DESIGNATIONS AND REQUIREMENTS. SEE DWG. S-17 FOR NEW STRUCTURAL STEEL DESIGNATIONS AND REQUIREMENTS.

PAINT: PAINT SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIAL PROVISIONS, "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 2)." THE COLOR OF THE TOPCOAT MATERIAL ON THE STRUCTURAL STEEL SHALL CONFORM TO FEDERAL STANDARD COLOR NO. 25240 (BLUE GREY).

PAINTING LIMITS: SEE DWG. NO. S-38 FOR PAINTING LIMITS AND CONTAINMENT DETAILS.

BITUMINOUS CONCRETE OVERLAY: PROPOSED WEARING SURFACE SHALL CONSIST OF TWO (2) LIFTS. THE FIRST SHALL BE PMA S0.25 (1" THICK). THE SECOND SHALL BE PMA S0.5 (1.5" THICK). PAVEMENT THICKNESS SHALL BE TAPERED AT ENDS TO MATCH PAVEMENT THICKNESS AT CONSTRUCTION LIMITS. SEE HIGHWAY PLANS.

DIMENSIONS: WHEN DECIMALS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED ZEROES.

EXISTING DIMENSIONS: DIMENSIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL BE INDICATED ON THE DRAWINGS AND SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

ELEVATIONS: ELEVATIONS SHOWN ARE TAKEN FROM THE ORIGINAL CONTRACT PLAN DRAWINGS UNLESS NOTED OTHERWISE.

TRAFFIC: ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS, "MAINTENANCE AND PROTECTION OF TRAFFIC" AND "PROSECUTION AND PROGRESS" AND CONSTRUCTION STAGES SHOWN ON THE PLANS.

UTILITIES; THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL UTILITIES WITHIN THE PROJECT LIMITS PRIOR TO THE START OF CONSTRUCTION AND SHALL TAKE NECESSARY PRECAUTIONS WHEN WORKING NEAR UTILITIES SO AS TO NOT DISTURB THEM OR PLACE ANY LOAD OR EQUIPMENT ON THEM. ALL UTILITY COMPANIES SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY WORK AFFECTING CABLES, CONDUITS, OR OTHER UTILITIES.

EXISTING PLANS: INFORMATION PERTAINING TO THE EXISTING STRUCTURE IS BASED ON EXISTING PLANS, WHICH ARE AVAILABLE FOR INSPECTION AT THE CONNECTICUT DEPARTMENT OF TRANSPORTATION PLANS OFFICE, 160 PASCONE PLACE, NEWINGTON, CT. USE OF EXISTING PLANS IS AT THE CONTRACTOR'S RISK. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS, DIMENSIONS AND ELEVATIONS WHICH CAN AFFECT THE SATISFACTORY COMPLETION OF THE PROPOSED WORK. SUCH FIELD VERIFICATION SHALL BE PERFORMED BEFORE SHOP DRAWINGS ARE SUBMITTED.

## CONCRETE NOTES:

CLASS "F" CONCRETE: CLASS "F" CONCRETE SHALL BE USED FOR KEEPER BLOCKS, PEDESTAL REPLACEMENT, AND PARAPET MODIFICATIONS AND TRANSITIONS.

CLASS "S" CONCRETE: CLASS "S" CONCRETE SHALL BE USED FOR PATCHING SUBSTRUCTURE COMPONENTS.

DECK REPAIRS: FULL DEPTH PATCHING (AS REQUIRED) AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISION "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)". PARTIAL DEPTH PATCHING (AS REQUIRED) AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISION "PARTIAL DEPTH PATCH".

JOINT SEAL: SEE SPECIAL PROVISIONS AND SHEETS S-29 AND S-30.

EXPOSED EDGES: EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1" X 1" UNLESS DIMENSIONED OTHERWISE.

CONCRETE COVER: ALL REINFORCEMENT SHALL HAVE TWO INCHES COVER UNLESS DIMENSIONED OTHERWISE.

REINFORCEMENT: ALL REINFORCEMENT SHALL BE ASTM A615 GRADE 60.

CONSTRUCTION JOINTS: CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

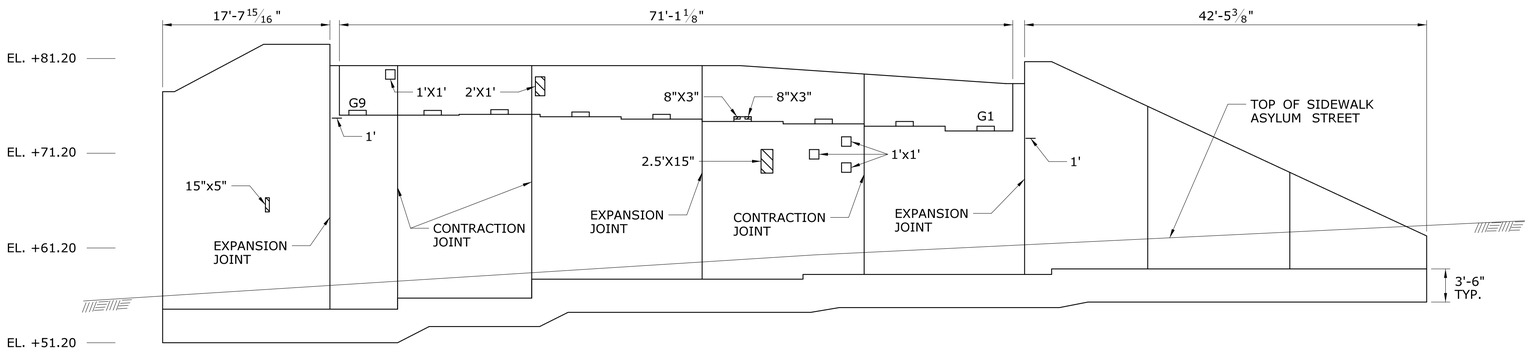
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Typical Section.dgn

SIGNATURE/BLOCK:
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

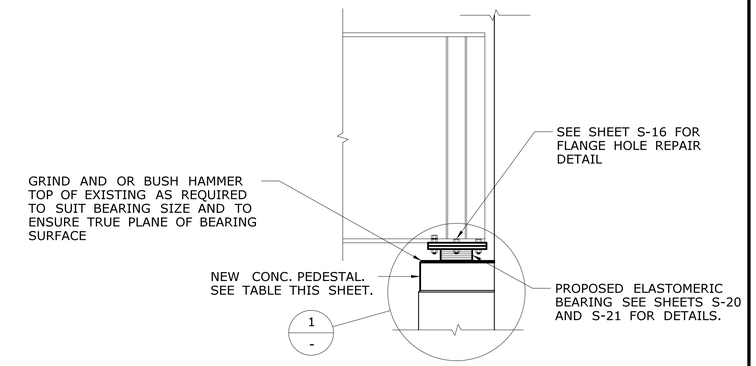
PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**
PROJECT NO. **63-700**
DRAWING TITLE: **TYPICAL SECTION AND NOTES**
DRAWING NO. **S-03**
SHEET NO. **02.04.03**



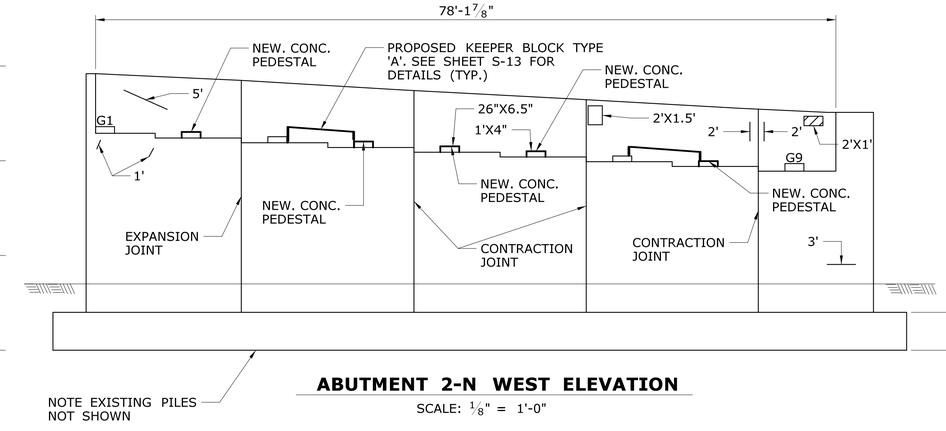

## ABUTMENT 2-S EAST ELEVATION

SCALE: 1/8" = 1'-0"



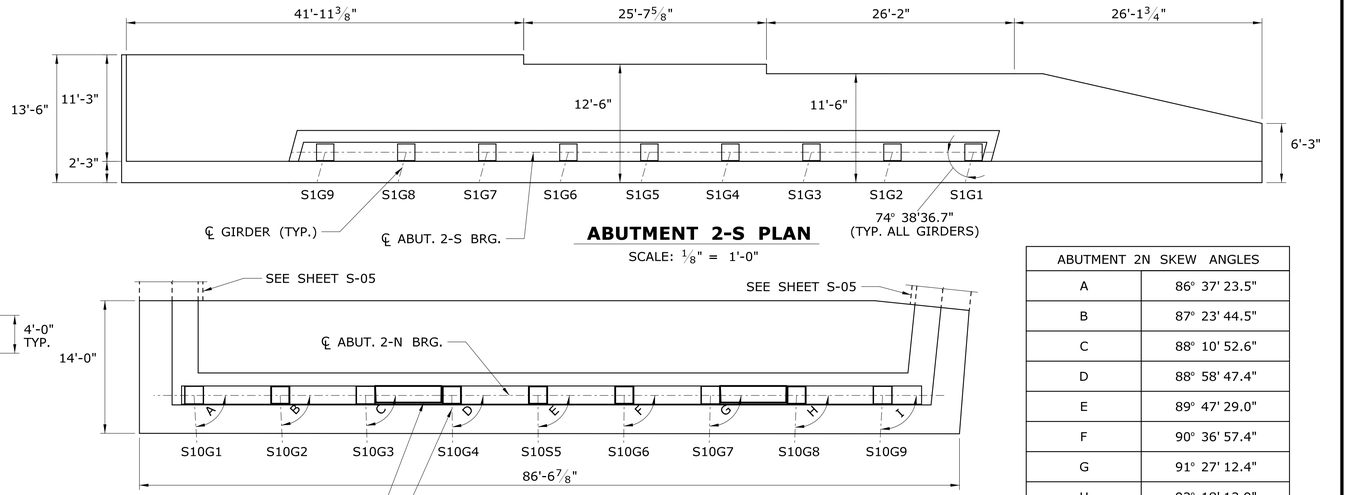

## PROPOSED ABUTMENT 2-N SECTION

SCALE: 1/2" = 1'-0"




## ABUTMENT 2-N WEST ELEVATION

SCALE: 1/8" = 1'-0"



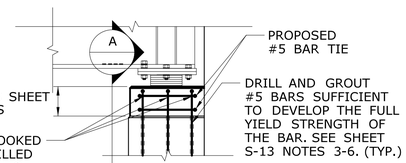

## ABUTMENT 2-S PLAN

SCALE: 1/8" = 1'-0"

## ABUTMENT 2-N PLAN

SCALE: 1/8" = 1'-0"

| ABUTMENT 2N SKEW ANGLES | |
|---|---|
| A | 86° 37' 23.5" |
| B | 87° 23' 44.5" |
| C | 88° 10' 52.6" |
| D | 88° 58' 47.4" |
| E | 89° 47' 29.0" |
| F | 90° 36' 57.4" |
| G | 91° 27' 12.4" |
| H | 92° 18' 13.9" |
| I | 93° 10' 01.5" |




## ELEVATION DETAIL

SCALE: 1/2" = 1'-0"

1
-

## CONCRETE DETERIORATION LEGEND

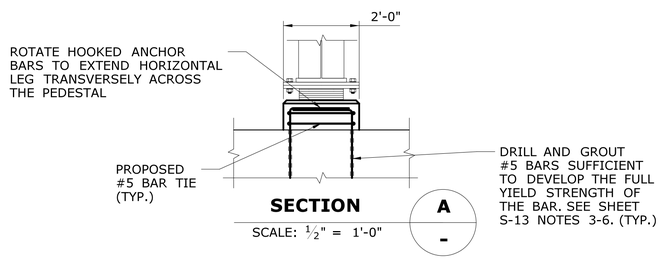
CRACK

MAP CRACKS

HOLLOW AREA

SPALL

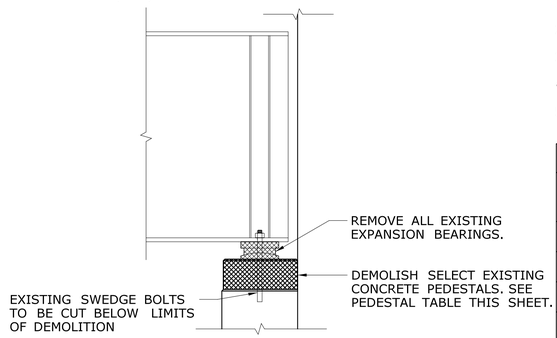
SPALL WITH EXPOSED REBAR




## SECTION

SCALE: 1/2" = 1'-0"

A
-




## ABUTMENT 2-N DEMOLITION SECTION

SCALE: 1/2" = 1'-0"

## REFERENCES

1) SEE SHEET S-03 FOR CONCRETE NOTES
2) SEE SHEET S-11 AND S-12 FOR SUBSTRUCTURE REPAIR DETAILS
3) SEE SHEET S-13 FOR KEEPER BLOCKS
4) SEE SHEET S-16 FOR FLANGE HOLE REPAIR DETAIL
5) SEE SHEET S-20 AND S-21 FOR ELASTOMERIC BEARING DETAILS

| PROPOSED ABUTMENT 2-N CONCRETE PEDESTALS | | | |
|---|---|---|---|
| GIRDER NO | BOTTOM OF STEEL ELEVATION (FT.) | TOTAL BEARING HEIGHT WITH PLATES (IN.) | THEORETICAL PEDESTAL ELEVATION (FT.) |
| 2 | 65.47 | 5 3/8" | 65.02 |
| 4 | 64.27 | 5 3/8" | 63.82 |
| 5 | 63.68 | 5 3/8" | 63.23 |
| 6 | 63.08 | 5 3/8" | 62.63 |
| 8 | 61.88 | 5 3/8" | 61.43 |

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Plers.dgn

SIGNATURE/ BLOCK:

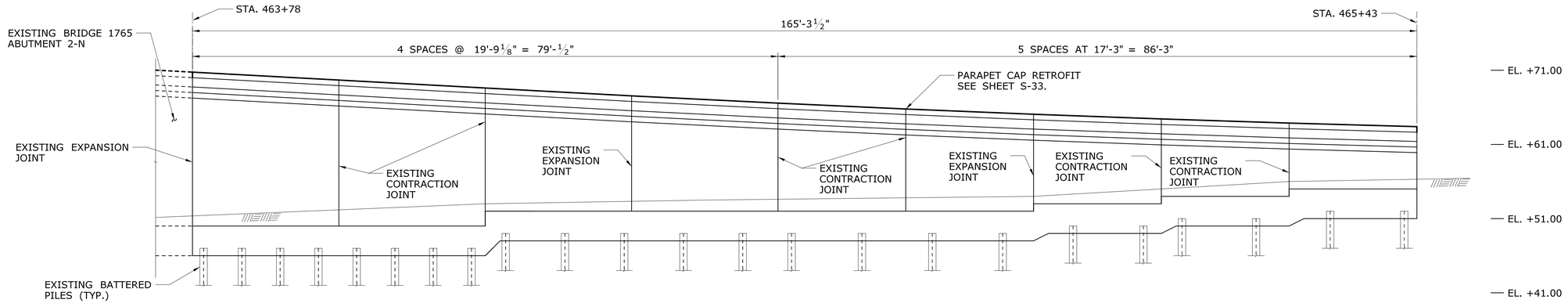
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty &Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD

DRAWING TITLE:
SUBSTRUCTURE REPAIR - ABUTMENTS

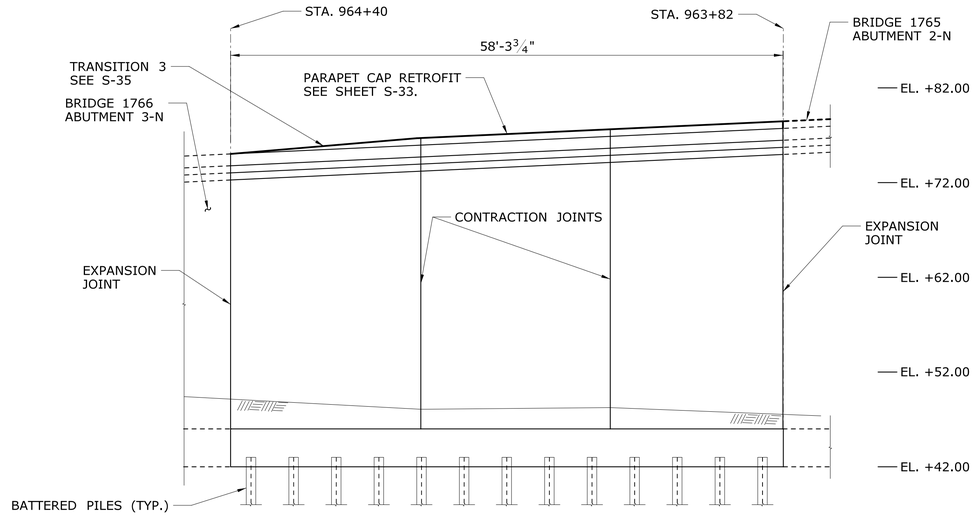
PROJECT NO. 63-700
DRAWING NO. S-04
SHEET NO. 02.04.04




## RETAINING WALL B SOUTH ELEVATION*

SCALE: ⅛" = 1'-0"

* STATIONS TAKEN ALONG RAMP 'S' BASELINE




## ABUTMENT 2-N NORTH WINGWALL NORTH ELEVATION

SCALE: ⅛" = 1'-0"

* STATIONS TAKEN ALONG I-84 EASTBOUND BASELINE

## REFERENCES

1) SEE SHEET S-03 FOR CONCRETE NOTES
2) SEE SHEET S-11 AND S-12 FOR SUBSTRUCTURE REPAIR DETAILS
3) SEE SHEET S-33 FOR PARAPET RETROFIT

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF

CHECKED BY: BSH

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Plers.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

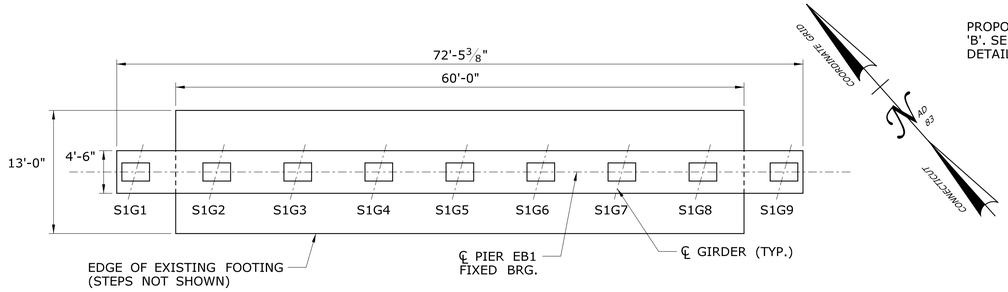
TOWN: HARTFORD

DRAWING TITLE: SUBSTRUCTURE REPAIR - RETAINING WALLS

PROJECT NO. 63-700

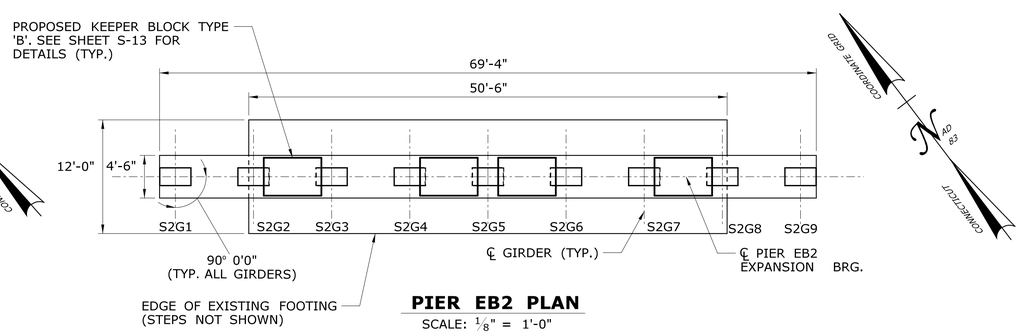
DRAWING NO. S-05

SHEET NO. 02.04.05



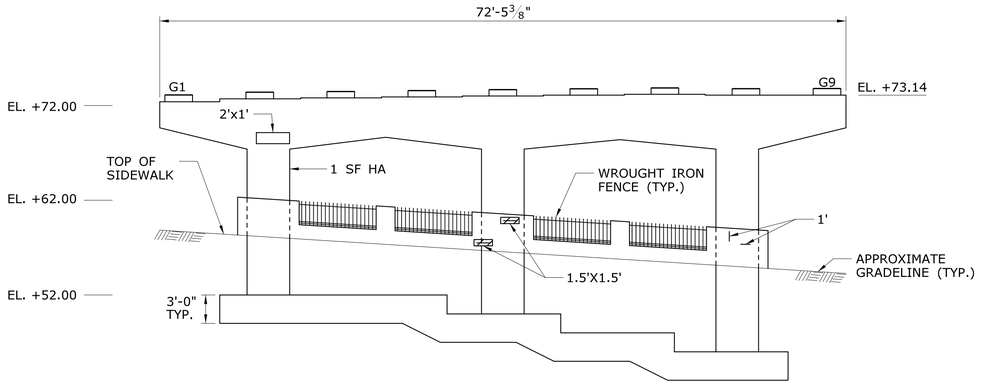

## PIER EB1 PLAN

SCALE: 1/8" = 1'-0"



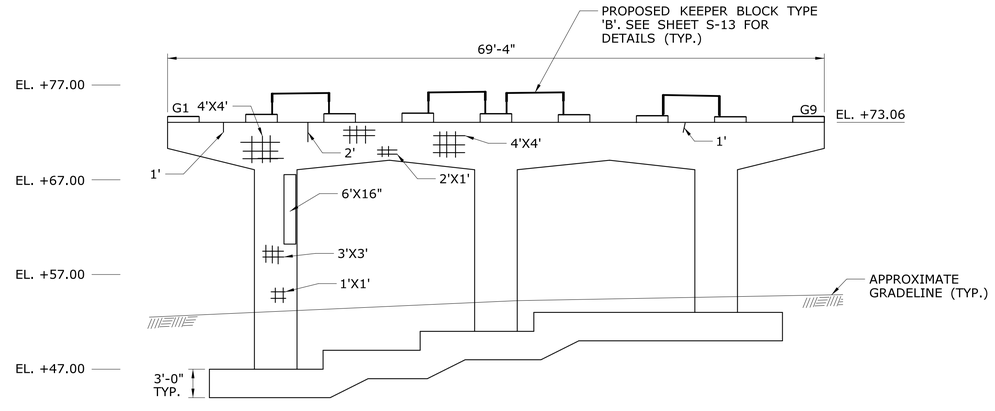

## PIER EB2 PLAN

SCALE: 1/8" = 1'-0"



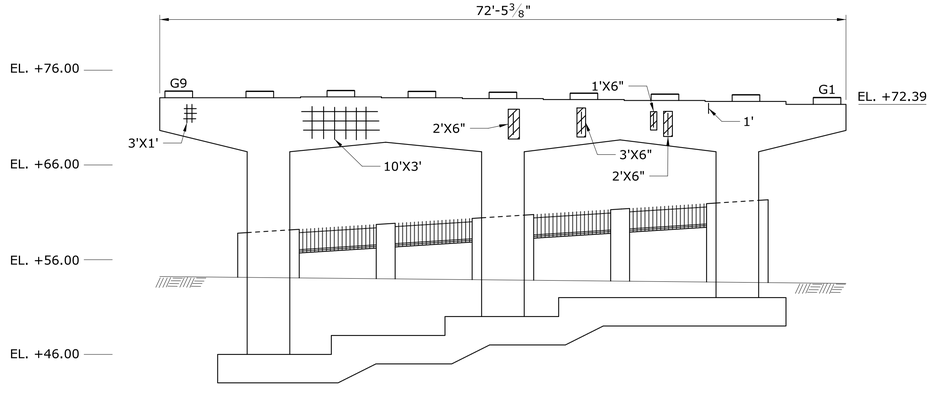

## PIER EB1 WEST ELEVATION

SCALE: 1/8" = 1'-0"



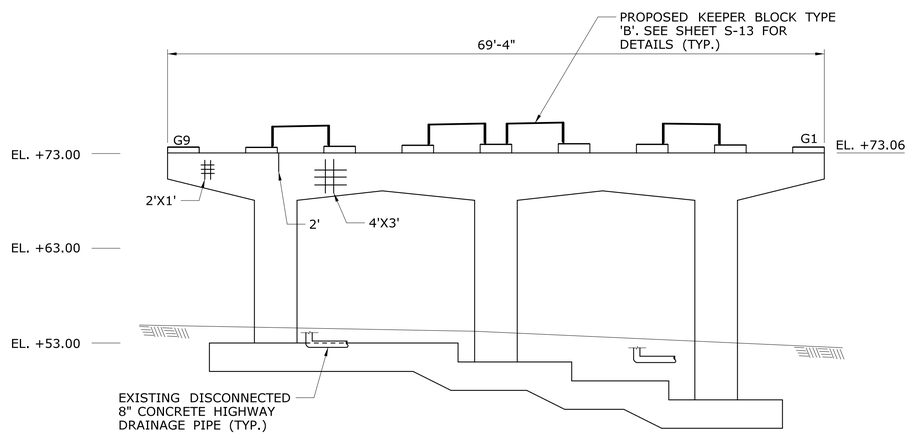

## PIER EB2 WEST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB1 EAST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB2 EAST ELEVATION

SCALE: 1/8" = 1'-0"

## CONCRETE DETERIORATION LEGEND

- CRACK
- MAP CRACKS
- HOLLOW AREA
- SPALL
- SPALL WITH EXPOSED REBAR

## REFERENCES

1) SEE SHEET S-03 FOR CONCRETE NOTES
2) SEE SHEET S-11 AND S-12 FOR SUBSTRUCTURE REPAIR DETAILS
3) SEE SHEET S-13 FOR KEEPER BLOCKS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Piers.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:

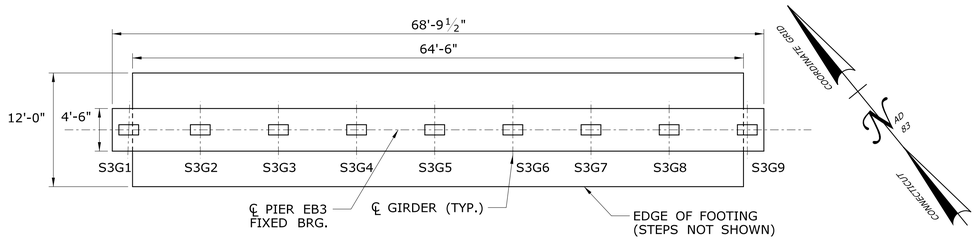
# REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD

DRAWING TITLE:

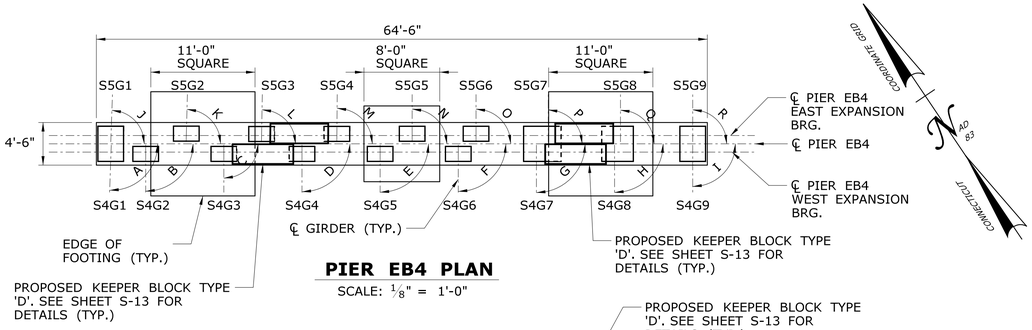
## SUBSTRUCTURE REPAIR - PIERS NO. EB1 & 2

PROJECT NO. 63-700
DRAWING NO. S-06
SHEET NO. 02.04.06




## PIER EB3 PLAN

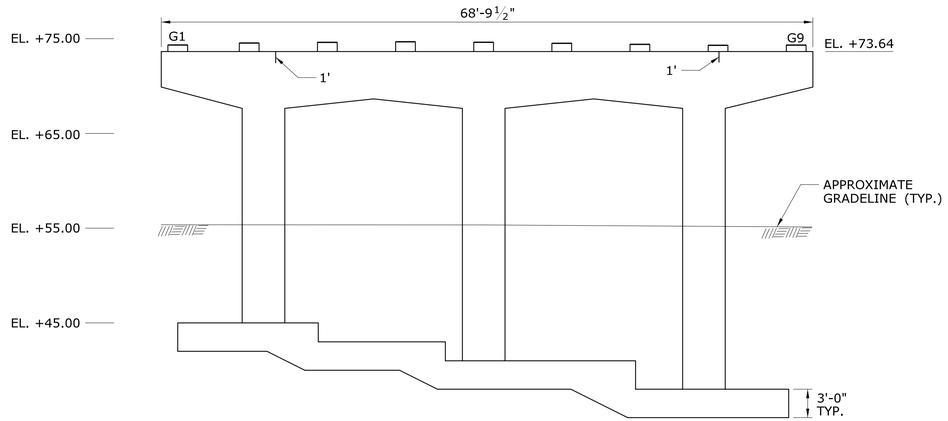
SCALE: 1/8" = 1'-0"




## PIER EB4 PLAN

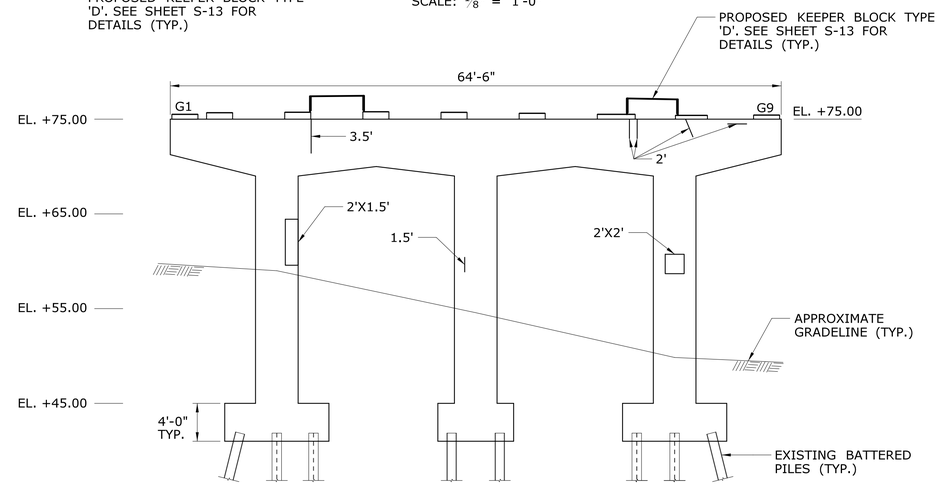
SCALE: 1/8" = 1'-0"

| PIER EB4 SKEW ANGLES | |
|---|---|
| A | 92° 01' 28.4" |
| B | 90° 00' 00.0" |
| C | 90° 00' 00.0" |
| D | 90° 00' 00.0" |
| E | 90° 00' 00.0" |
| F | 90° 00' 00.0" |
| G | 90° 00' 00.0" |
| H | 90° 00' 00.0" |
| I | 90° 00' 00.0" |
| J | 87° 58' 31.2" |
| K | 88° 28' 52.6" |
| L | 88° 59' 14.6" |
| M | 89° 29' 37.2" |
| N | 90° 00' 00.0" |
| O | 90° 00' 00.0" |
| P | 90° 00' 00.0" |
| Q | 90° 00' 00.0" |
| R | 90° 00' 00.0" |



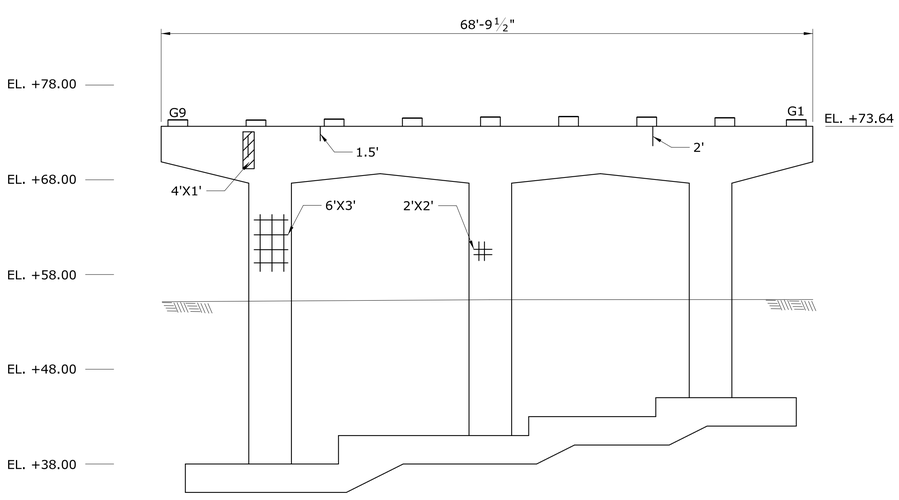

## PIER EB3 WEST ELEVATION

SCALE: 1/8" = 1'-0"



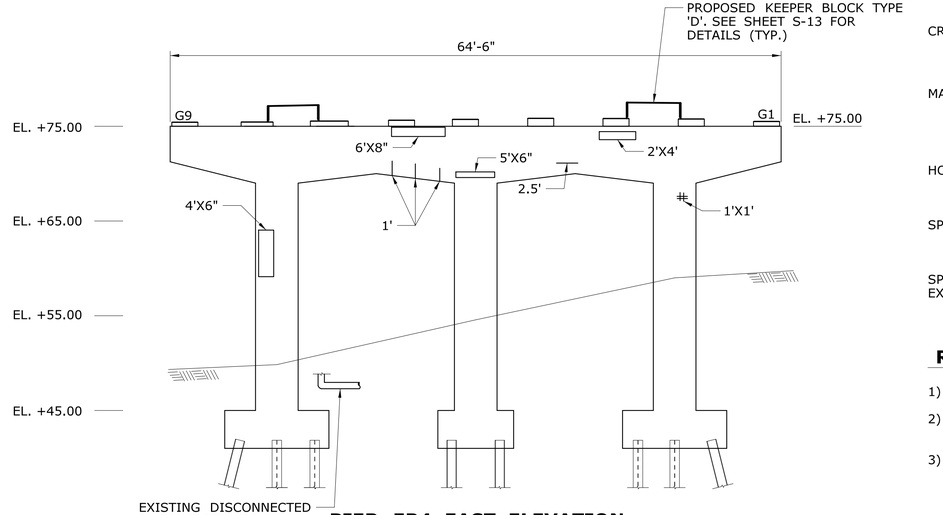

## PIER EB4 WEST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB3 EAST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB4 EAST ELEVATION

SCALE: 1/8" = 1'-0"

## CONCRETE DETERIORATION LEGEND

- CRACK
- MAP CRACKS
- HOLLOW AREA
- SPALL
- SPALL WITH EXPOSED REBAR

## REFERENCES

1) SEE SHEET S-03 FOR CONCRETE NOTES
2) SEE SHEET S-11 AND S-12 FOR SUBSTRUCTURE REPAIR DETAILS
3) SEE SHEET S-13 FOR KEEPER BLOCKS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

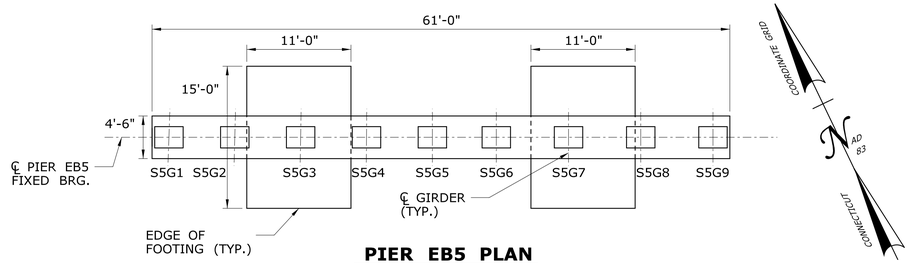
Filename: ...\MSta..Design\1765 Piers.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

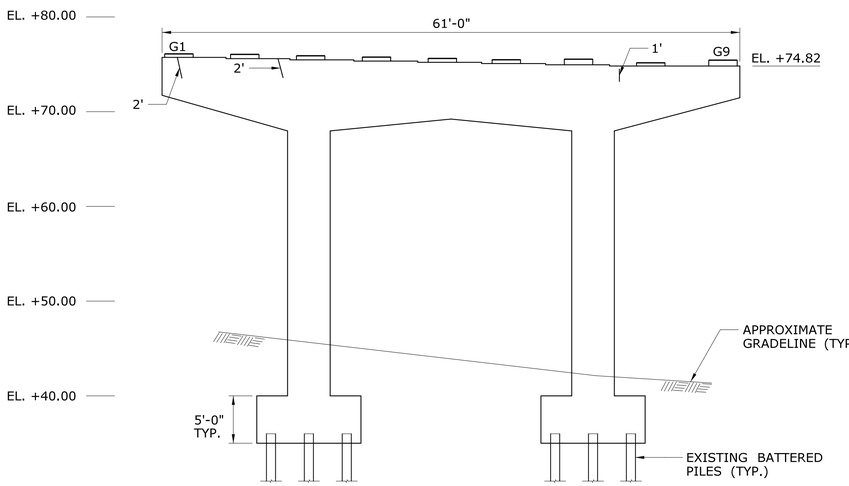
PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**
PROJECT NO. **63-700**
DRAWING TITLE: **SUBSTRUCTURE REPAIR - PIERS NO. EB3 & 4**
DRAWING NO. **S-07**
SHEET NO. **02.04.07**



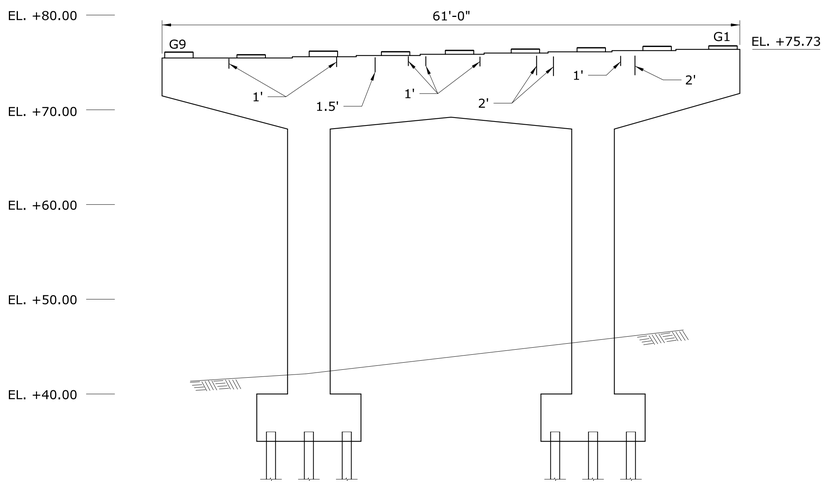

## PIER EB5 PLAN

SCALE: 1/8" = 1'-0"



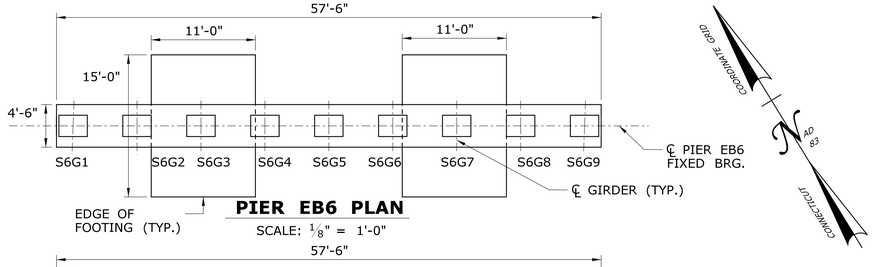

## PIER EB5 WEST ELEVATION

SCALE: 1/8" = 1'-0"



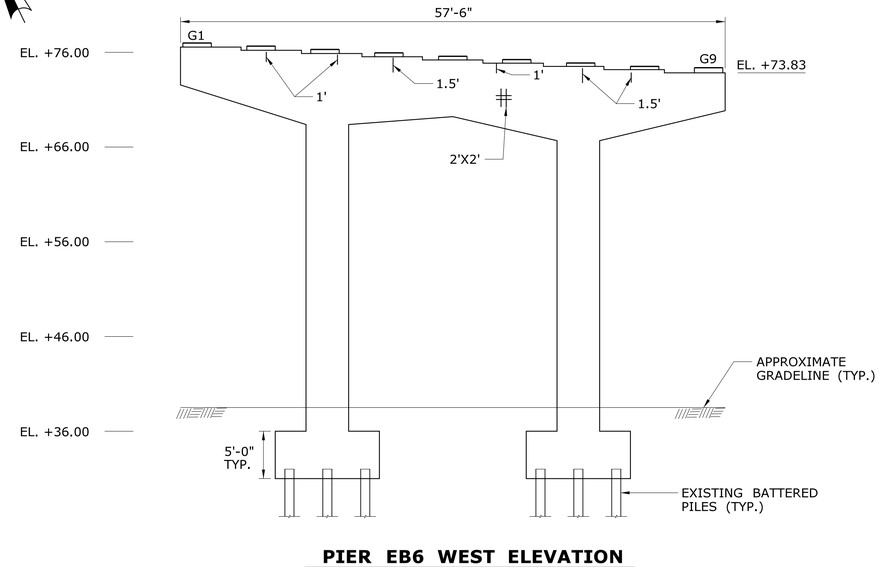

## PIER EB5 EAST ELEVATION

SCALE: 1/8" = 1'-0"



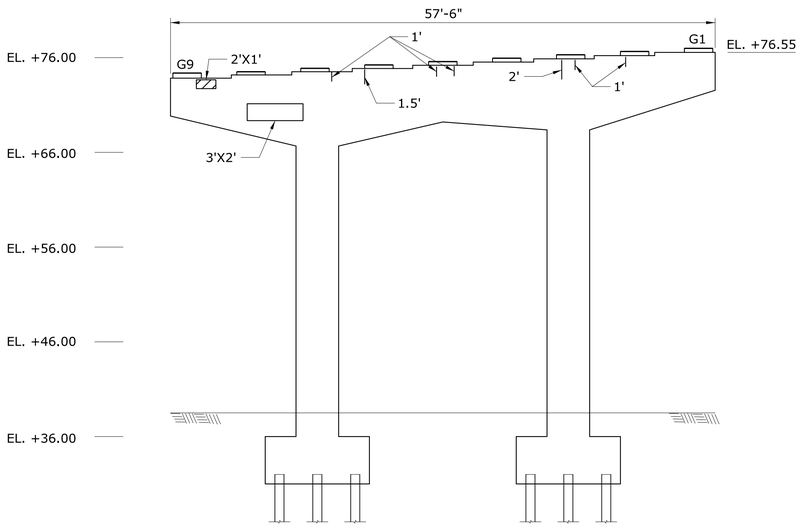

## PIER EB6 PLAN

SCALE: 1/8" = 1'-0"




## PIER EB6 WEST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB6 EAST ELEVATION

SCALE: 1/8" = 1'-0"

## CONCRETE DETERIORATION LEGEND

CRACK

MAP CRACKS

HOLLOW AREA

SPALL

SPALL WITH EXPOSED REBAR

## REFERENCES

1) SEE SHEET S-03 FOR CONCRETE NOTES
2) SEE SHEET S-11 AND S-12 FOR SUBSTRUCTURE REPAIR DETAILS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Piers.dgn

SIGNATURE/ BLOCK:

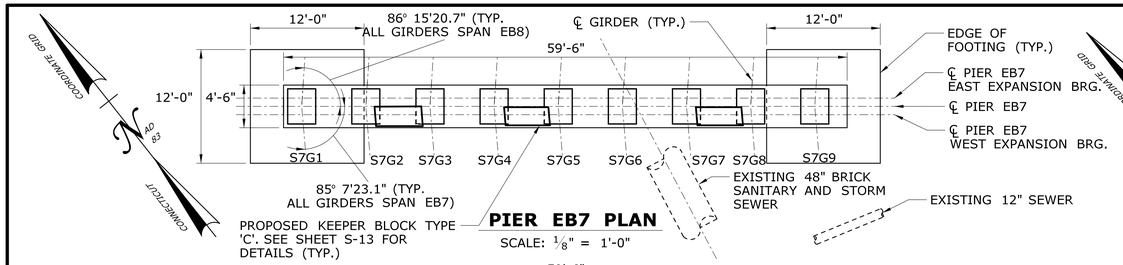
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty &Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

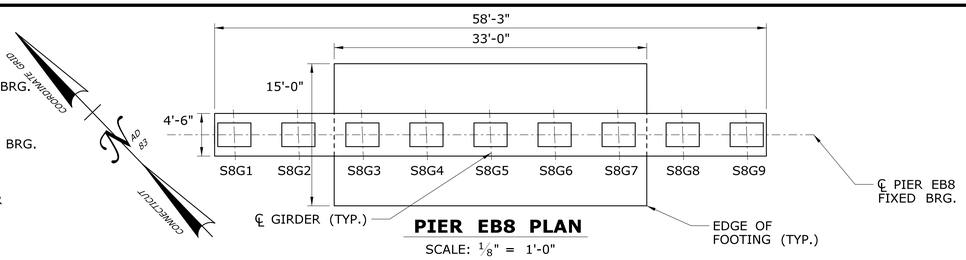
DRAWING TITLE:
**SUBSTRUCTURE REPAIR - PIERS NO. EB5 & 6**

PROJECT NO. **63-700**
DRAWING NO. **S-08**
SHEET NO. **02.04.08**



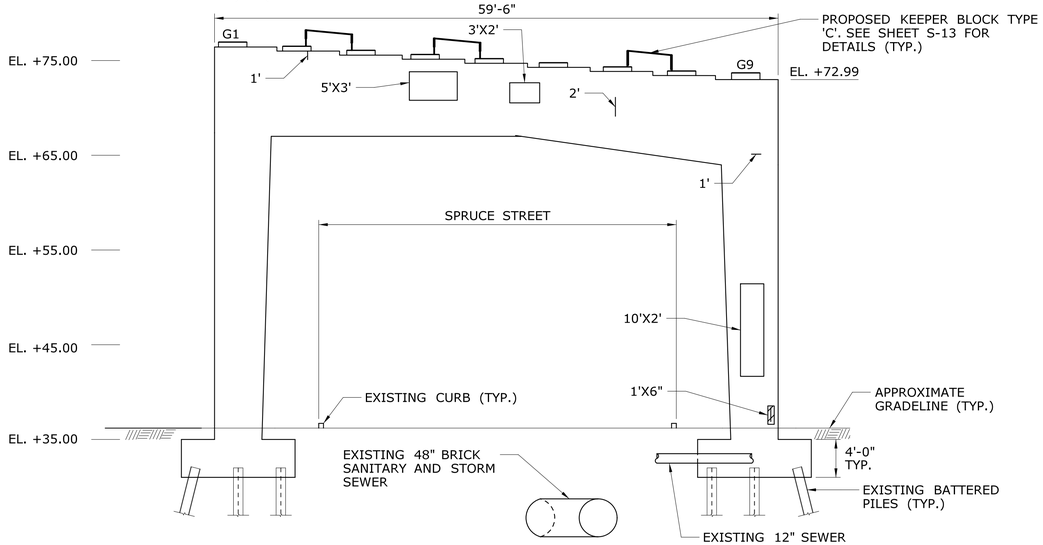

## PIER EB7 PLAN

SCALE: 1/8" = 1'-0"



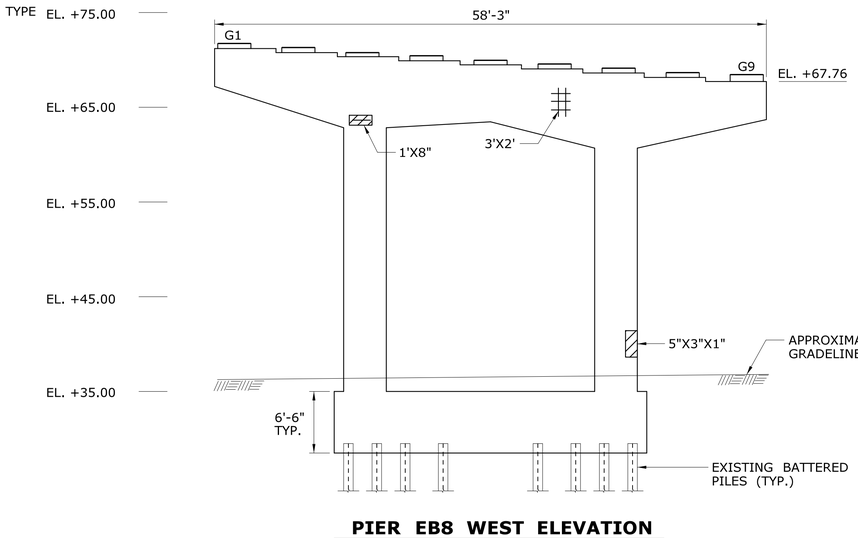

## PIER EB8 PLAN

SCALE: 1/8" = 1'-0"



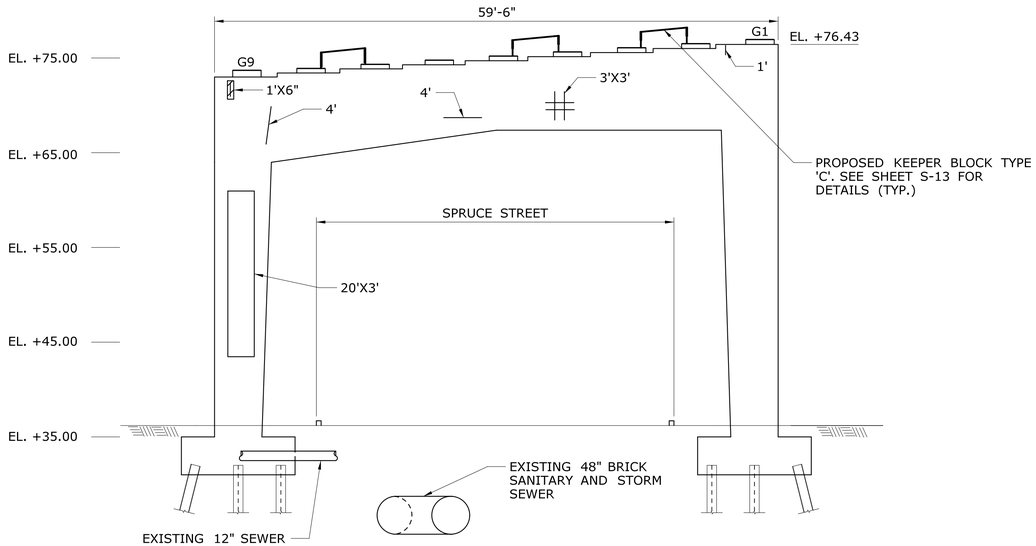

## PIER EB7 WEST ELEVATION

SCALE: 1/8" = 1'-0"



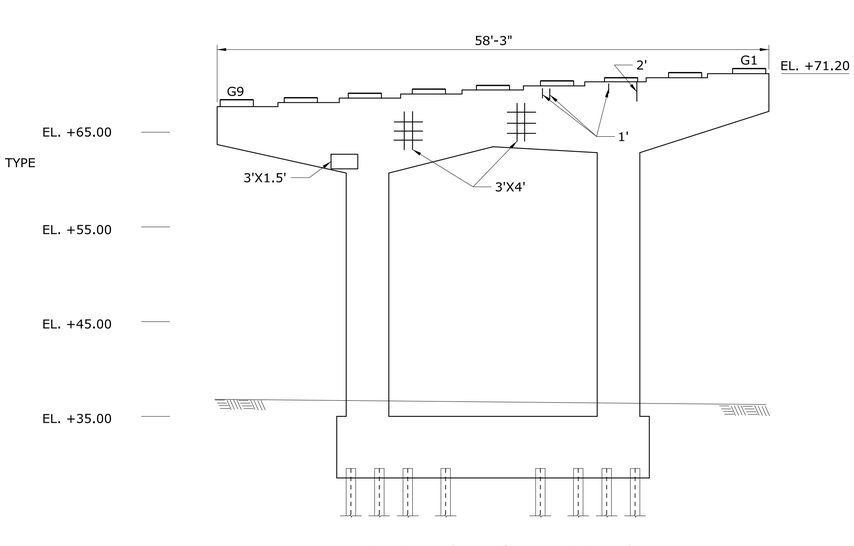

## PIER EB8 WEST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB7 EAST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB8 EAST ELEVATION

SCALE: 1/8" = 1'-0"

## CONCRETE DETERIORATION LEGEND

- CRACK
- MAP CRACKS
- HOLLOW AREA
- SPALL
- SPALL WITH EXPOSED REBAR

## REFERENCES

1) SEE SHEET S-03 FOR CONCRETE NOTES
2) SEE SHEET S-11 AND S-12 FOR SUBSTRUCTURE REPAIR DETAILS
3) SEE SHEET S-13 FOR KEEPER BLOCKS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Piers.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

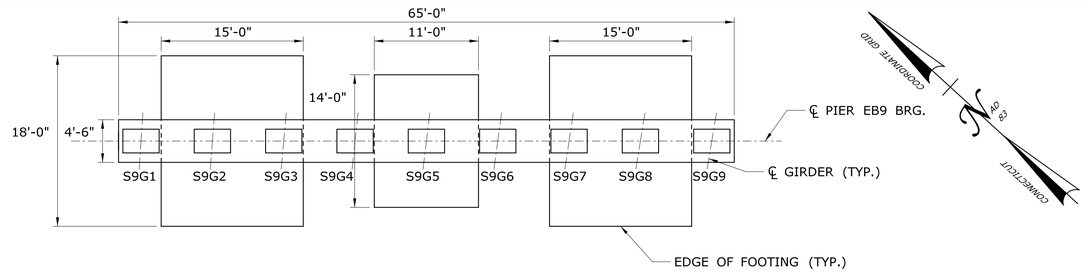
PROJECT TITLE:

**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

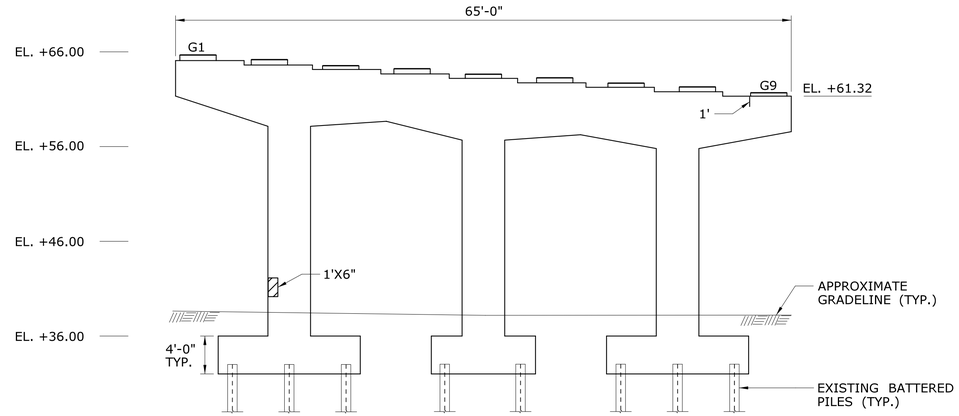
DRAWING TITLE: **SUBSTRUCTURE REPAIR - PIERS NO. EB7 & 8**

PROJECT NO. **63-700**
DRAWING NO. **S-09**
SHEET NO. **02.04.09**



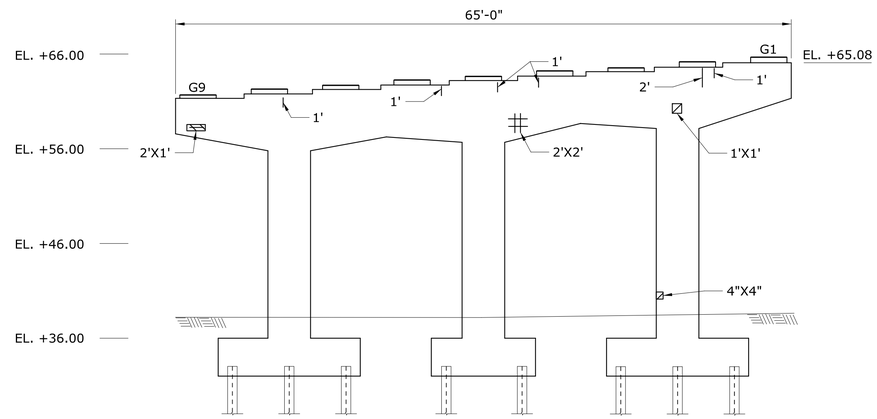

## PIER EB9 PLAN

SCALE: 1/8" = 1'-0"




## PIER EB9 WEST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB9 EAST ELEVATION

SCALE: 1/8" = 1'-0"

## CONCRETE DETERIORATION LEGEND

- CRACK
- MAP CRACKS
- HOLLOW AREA
- SPALL
- SPALL WITH EXPOSED REBAR

## REFERENCES

1) SEE SHEET S-03 FOR CONCRETE NOTES
2) SEE SHEET S-11 AND S-12 FOR SUBSTRUCTURE REPAIR DETAILS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Piers.dgn

SIGNATURE/ BLOCK:

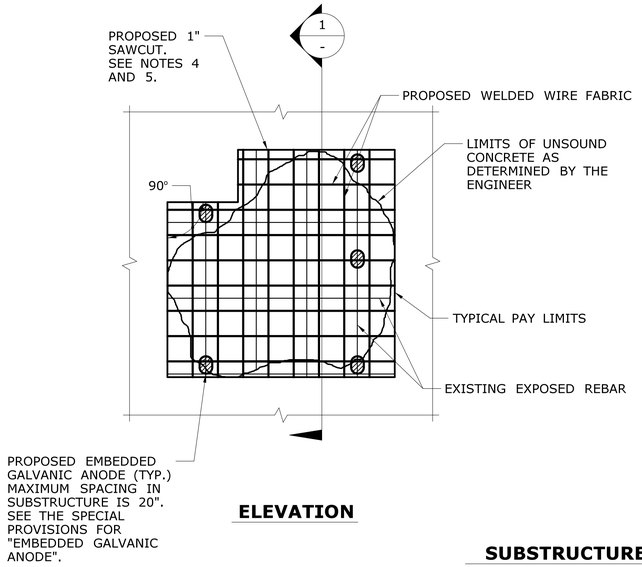
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

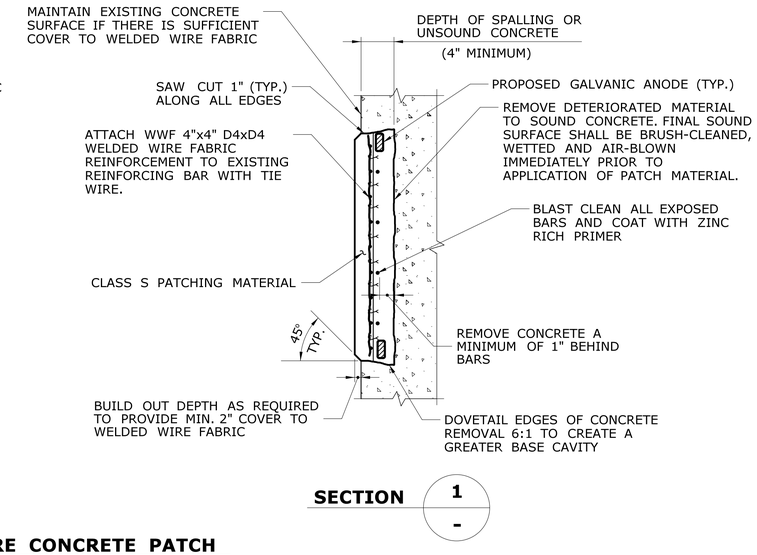
TOWN: HARTFORD

DRAWING TITLE:
SUBSTRUCTURE REPAIR - PIER NO. EB9

PROJECT NO. 63-700
DRAWING NO. S-10
SHEET NO. 02.04.10




**ELEVATION**




**SECTION** 1 - -

## SUBSTRUCTURE CONCRETE PATCH

SCALE: $1\frac{1}{2}$" = 1'-0"




## CORNER PATCH DETAIL

SCALE: $1\frac{1}{2}$" = 1'-0"

NOTE

TYPICAL DETAIL APPLICABLE FOR COLUMN CORNERS, OVERHEAD CORNERS, AND TOP EDGES OF PIER CAPS. WORK WITH "SUBSTRUCTURE CONCRETE PATCH" DETAILS AND PROCEDURE NOTES ON THIS SHEET.

| REBAR LAP TABLE | |
|---|---|
| BAR SIZE | MINIMUM LAP LENGTH |
| | INCH |
| #4 | 15" |
| #5 | 18" |

**THE ENGINEER SHALL BE NOTIFIED OF ANY BARS GREATER THAN #5 THAT REQUIRE REPAIR. THESE BARS SHALL BE SPLICED AT THE DIRECTION OF THE ENGINEER.




## LAPPED TIED SPLICE REBAR




## LAPPED WELDED SPLICE DETAIL

## REINFORCEMENT SPLICE DETAILS

NOT TO SCALE

SPLICE NOTES

1. WELDED SPLICE DETAIL TO BE USED ONLY IF IT IS VERIFIED THAT EXISTING STEEL IS WELDABLE BASED ON ITS CHEMICAL COMPOSITION.
2. WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.4 STRUCTURAL WELDING CODE - REINFORCING STEEL.
3. MECHANICAL SPLICERS ARE AN ACCEPTABLE ALTERNATE IF APPROVED BY THE ENGINEER.

## SUBSTRUCTURE CONCRETE PATCH REPAIR PROCEDURE

A. THE SUBSTRUCTURE CONCRETE PATCH DETAIL APPLIES TO DETERIORATED AREAS OF REINFORCED CONCRETE WHERE REINFORCING BARS ARE EXPOSED.

B. REMOVE DETERIORATED MATERIAL TO SOUND CONCRETE LEAVING NO OFFSET OR ABRUPT CHANGES IN CONTOUR. REMOVE CONCRETE A MINIMUM OF 1" BEYOND THE EXPOSED REINFORCING.

C. CLEAN EXISTING REINFORCING STEEL AND CONCRETE (NEWLY EXPOSED) PER THE REQUIREMENTS OF THE SPECIAL PROVISION. MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED AND SPLICED AS SHOWN IN DETAIL OR AS DIRECTED BY THE ENGINEER. COST OF REINFORCING STEEL SPLICING IS INCIDENTAL TO THE ITEM "CLASS S CONCRETE".

D. INSTALL GALVANIC ANODES AND WELDED WIRE FABRIC. APPLY ZINC RICH PRIMER TO EXISTING AND NEW REINFORCING STEEL IMMEDIATELY PRIOR TO PLACING PATCHING CONCRETE. WELDED WIRE FABRIC AND ZINC COATING COST INCIDENTAL TO THE ITEM "CLASS S CONCRETE".

E. FORM AND PATCH SURFACE.

F. ALL NEW EXPOSED CONCRETE SURFACES WITHIN AREA TO BE REPAIRED SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH.

G. ZINC ANODES TO BE INSTALLD IN ALL PATCHES. ANODES SHALL BE PAID FOR AS "EMBEDDED GALVANIC ANODES" AND SHALL BE INSTALLED PER THE REQUIREMENTS OF THE SPECIAL PROVISIONS. MAXIMUM ANODE SPACING SHALL BE 20" ON CENTER.

## SUBSTRUCTURE REPAIR NOTES

1. THE CONTRACTOR SHALL REPAIR THE SUBSTRUCTURE DEFICIENCIES IDENTIFIED ON PLAN DRAWINGS S-04 THROUGH S-10. REPAIR DETAILS APPLY TO SPALLED, SCALED, AND HOLLOW AREAS IN ABUTMENTS AND PIERS WHERE REQUIRED AND NOTED ON DRAWINGS AND AS DIRECTED BY THE ENGINEER.
2. ESTABLISH LIMITS OF REPAIRS AS SHOWN AND AT THE DIRECTION OF THE ENGINEER. THE EXTENT AND LOCATION OF ALL CONCRETE SUBSTRUCTURE REPAIRS ARE TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT THE REPAIR AREAS.
3. SUBSTRUCTURE CONCRETE PATCH REPAIRS SHALL BE PAID FOR UNDER THE ITEM "CLASS 'S' CONCRETE".
4. THE LIMITS OF THE REPAIRS SHALL BE SAWCUT ALONG NEAT LINES WHERE PRACTICAL TO A DEPTH OF 1" TO PRODUCE A CLEAN EDGE. SEE SPECIAL PROVISIONS.
5. NEW CONCRETE PATCHES SHALL MATCH SHAPE OF EXISTING CONCRETE SURFACES. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARE CORNERS. COLOR OF NEW PATCH CONCRETE SHALL MATCH COLOR OF THE ADJACENT SURFACES AS CLOSELY AS POSSIBLE.
6. EXPOSED REINFORCING BARS SHALL BE BLAST CLEANED AND COATED WITH A SINGLE COMPONENT ZINC RICH PRIMER THAT CONFORMS TO THE SPECIAL PROVISIONS, BEFORE APPLYING THE PATCHING MATERIAL. COST OF PRIMER SHALL BE INCLUDED IN THE COST FOR "CLASS 'S' CONCRETE". INSTALL EMBEDDED GALVANIC ANODES AFTER BARS ARE CLEANED AND COATED PRIOR TO APPLYING PATCHING MATERIAL.
7. SPLICED REINFORCING BARS SHALL BE COATED WITH A SINGLE COMPONENT ZINC RICH PRIMER THAT CONFORMS TO THE SPECIAL PROVISIONS BEFORE APPLYING PATCHING MATERIAL. COST OF PRIMER SHALL BE INCLUDED IN THE COST FOR "CLASS 'S' CONCRETE".
8. THE SURFACE OF EXISTING OR PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED AND WETTED WITH CLEAN WATER BEFORE NEW CONCRETE IS PLACED PER THE SPECIAL PROVISIONS.
9. EXISTING CRACKS IDENTIFIED BY THE ENGINEER SHALL BE SEALED IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND THE CRACK REPAIR DETAILS SHOWN ON SHEET S-12.
10. COVER OVER EXISTING REINFORCEMENT SHALL BE A MINIMUM OF 2". FACE OF PATCHED AREA MAY BE BUILT OUT TO MEET THIS REQUIREMENT, IF NECESSARY.
11. THE REMOVAL OF DETERIORATED CONCRETE SHALL PROCEED AS DIRECTED BY THE ENGINEER. IF THE REMOVAL OF DETERIORATED CONCRETE BECOMES EXCESSIVE, THE REMOVAL WORK SHALL BE STOPPED AT THE LOCATION AND THE ENGINEER NOTIFIED IMMEDIATELY. COST OF REMOVAL OF DETERIORATED CONCRETE AND SURFACE PERPARATION OF THE REPAIR AREA SHALL BE INCLUDED IN ITEM "CLASS 'S' CONCRETE".
12. THE CONTRACTOR SHALL NOT REMOVE CONCRETE EXCEPT IN THE PRESENCE OF THE ENGINEER OR HIS APPOINTED REPRESENTATIVE. IF THE AREA REMOVED EXCEEDS 20 SQUARE FEET, OR MORE THAN 30% OF COLUMN CROSS SECTIONAL PERIMETER, OR IF THE REMOVAL DEPTH EXTENDS MORE THAN $1\frac{1}{2}$" BEHIND THE MAIN REINFORCING BARS, THE CONTRACTOR SHALL CEASE REMOVAL OPERATIONS AND NOTIFY THE ENGINEER IMMEDIATELY. THE ENGINEER SHALL DETERMINE IF THE REMOVAL OPERATIONS REDUCE THE STRUCTURAL CAPCAITY OF THE ELEMENT.
13. SHALLOW CONCRETE DETERIORATION REMOVED TO SOUND CONCRETE AND NOT EXPOSING EXISTING REINFORCING STEEL SHALL NOT BE PATCHED.
14. THE CONTRACTOR SHALL PROVIDE INSPECTION ACCESS TO THE RESIDENT ENGINEER DURING THE PERFORMANCE OF THIS WORK AT NO ADDITIONAL COST TO THE STATE.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Substructure Repair_New.dgn

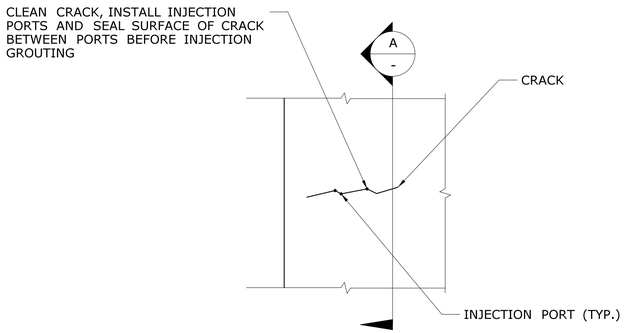
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

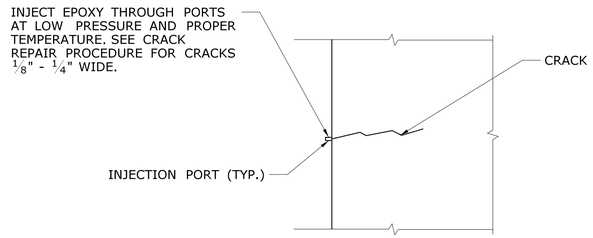
PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**
DRAWING TITLE: **SUBSTRUCTURE REPAIR - DETAILS 1**

PROJECT NO. **63-700**
DRAWING NO. **S-11**
SHEET NO. **02.04.11**




**ELEVATION**




**SECTION** A -

## CRACKS 1/8" - 1/4" WIDE

NOT TO SCALE

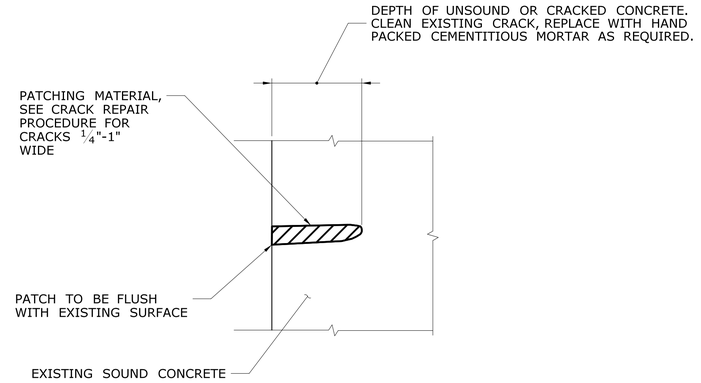
## CRACK REPAIR PROCEDURE FOR CRACKS 1/8" - 1/4" WIDE

1. SURFACE PREPARATION:
   -REMOVE DUST, LAITANCE, GREASE, IMPREGNATIONS, FOREIGN PARTICLES AND DISINTEGRATED MATERIALS. SURFACE MUST BE CLEAN AND SOUND WITH A ROUGHENED TEXTURE. IDEALLY DRY, SURFACE MAY BE DAMP BUT SHALL BE FREE OF STANDING WATER.

2. APPLICATION AND FINISH:
   - SET GROUT PRESSURE INJECTION PORTS INTO PLACE.
   - MIX EPOXY ADHESIVE PER MANUFACTURER'S SPECIFICATION.
   - SEAL CRACKS AND PORTS BY APPLYING MIXED EPOXY ADHESIVE MATERIAL OVER THE CRACKS TO BE PRESSURE INJECTED WITH THE HIGH-STRENGTH EPOXY GROUT.
   - MIX EPOXY GROUT PER MANUFACTURER'S SPECIFICATION.
   - WHEN THE EPOXY ADHESIVE HAS CURED, INJECT THE EPOXY GROUT WITH STEADY PRESSURE.
   - ALLOW THE INJECTED EPOXY GROUT TO SET THEN CUT THE PRESSURE INJECTION PORTS FLUSH WITH THE EPOXY ADHESIVE.

3. CRACK REPAIRS SHALL BE PAID UNDER THE ITEM "EPOXY INJECTION CRACK REPAIR". SEE SPECIAL PROVISIONS.

4. ANY CRACKS THAT MEASURE LESS THAN 1/8" AT THEIR WIDEST POINT SHALL NOT BE REPAIRED UNLESS DIRECTED BY THE ENGINEER.




## CRACKS 1/4" - 1" WIDE

NOT TO SCALE

## CRACK REPAIR PROCEDURE FOR CRACKS 1/4" - 1" WIDE

1. SURFACE PREPARATION:
   - REMOVE ALL LOOSE, DETERIORATED CONCRETE, DIRT, OIL, GREASE, AND ALL BOND-INHIBITING MATERIALS FROM SURFACE.
   - PROVIDE A MINIMUM REPAIR DEPTH OF 1/8".
   - PREPARATION WORK SHOULD BE DONE BY SCABBLER, CHISELING, WIRE BRUSHING OR OTHER APPROPRIATE MECHANICAL MEANS.
   - ROUGHEN CONTACT SURFACE WITH A MINIMUM PROFILE OF APPROXIMATELY 1/16" FOR BONDING WITH NEW MORTAR.
   - SATURATE SURFACE WITH CLEAN WATER.
   - SUBSTRATE SHOULD BE SATURATED SURFACE DRY WITH NO STANDING WATER DURING APPLICATION.

2. APPLICATION AND FINISH:
   - MIX COMPONENTS OF PATCHING MORTAR AND EPOXY ADHESIVE IN ACCORDANCE TO THE MANUFACTURER'S SPECIFICATIONS.
   - APPLY EPOXY ADHESIVE ONTO THE CONCRETE WITH A BRUSH OR BROOM.
   - APPLY THE PATCHING MORTAR WHILE THE EPOXY ADHESIVE IS STILL TACKY. IF THE COATING BECOMES GLOSSY AND LOSES TACKINESS, REMOVE ANY SURFACE CONTAMINANTS AND RECOAT WITH ADDITIONAL ADHESIVE EPOXY AND PROCEED WITH PATCHING WORK.
   - SCRUB REPAIR MORTAR INTO THE SUBSTRATE, FILLING ALL PORES AND VOIDS. FORCE MATERIAL AGAINST EDGE OF REPAIR, WORKING TOWARDS THE CENTER.
   - MATERIAL MAYBE APPLIED IN MULTIPLE LIFTS. EACH LIFT THICKNESS SHALL NOT BE LESS THAN 1/8" NOR GREATER THAN 3" THICK.
   - WHERE MULTIPLE LIFTS ARE REQUIRED, SCORE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR NEXT LIFT. ALLOW PRECEDING LIFT TO REACH FINAL SET, 30 MINUTES MINIMUM, BEFORE APPLYING FRESH MATERIAL.
   - SATURATE SURFACE OF THE LIFT WITH CLEAN WATER.
   - SCRUB FRESH MORTAR INTO PRECEDING LIFT.
   - AFTER FILLING REPAIR, CONSOLIDATE, THEN SCREED.
   - ALLOW MORTAR TO SET TO DESIRED STIFFNESS, THEN FINISH WITH WOOD OR SPONGE FLOAT FOR A SMOOTH SURFACE.

3. CURING:
   - CURING SHOULD COMMENCE IMMEDIATELY AFTER FINISHING.
   - IF NECESSARY, PROTECT NEWLY APPLIED MATERIAL FROM DIRECT SUNLIGHT, WIND, RAIN OR FROST.
   - MOIST CURE WITH FINE MIST OF WATER OR WITH WET BURLAP AND POLYETHYLENE.

4. CRACK REPAIR INCLUDING THE COST OF CEMENTITIOUS MORTAR SHALL BE PAID UNDER THE ITEM "EPOXY INJECTION CRACK REPAIR". SEE SPECIAL PROVISIONS.

5. FOR CRACKS OR GAPS IN CONCRETE SURFACE GREATER THAN 1", USE PATCH REPAIR DETAIL.

## REFERENCES

1) SEE SHEETS S-04 TO S-10 FOR SUBSTRUCTURE REPAIR LIMITS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Substructure Conc Crack Repair.dgn

SIGNATURE/ BLOCK:

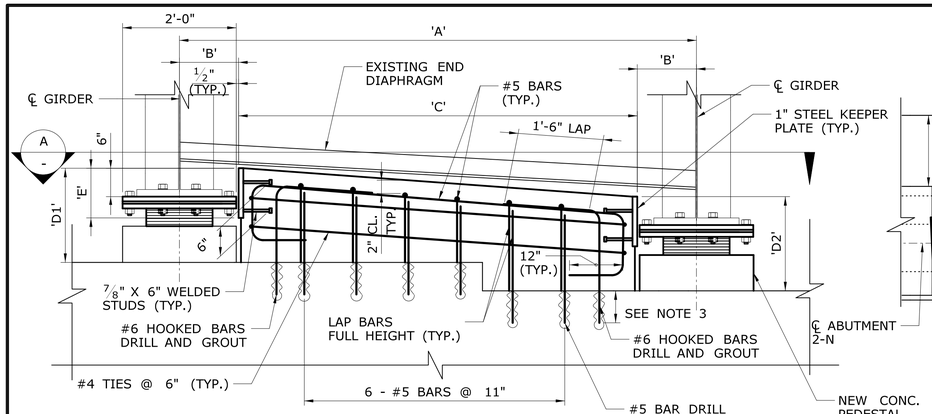
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD

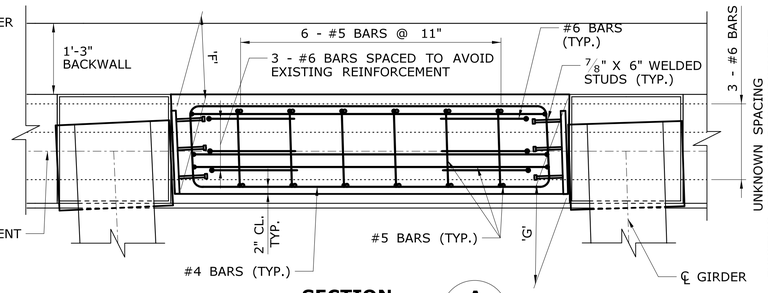
DRAWING TITLE:
SUBSTRUCTURE REPAIR - DETAILS 2

PROJECT NO. 63-700
DRAWING NO. S-12
SHEET NO. 02.04.12



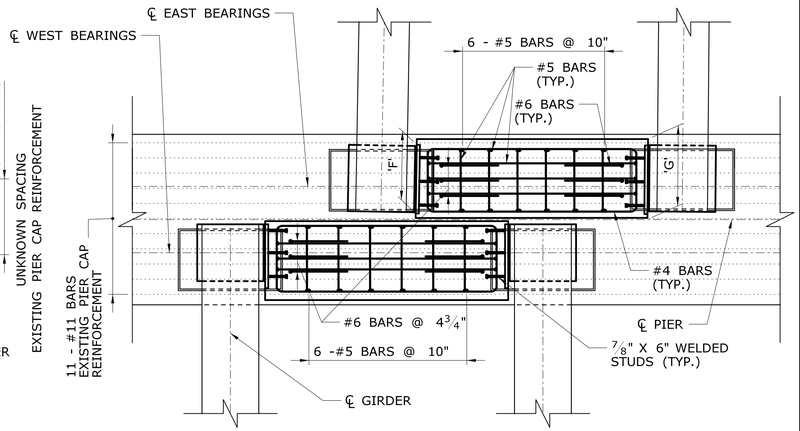

## KEEPER BLOCK 'A' (ABUTMENT 2-N)

SCALE: 3/4" = 1'-0"



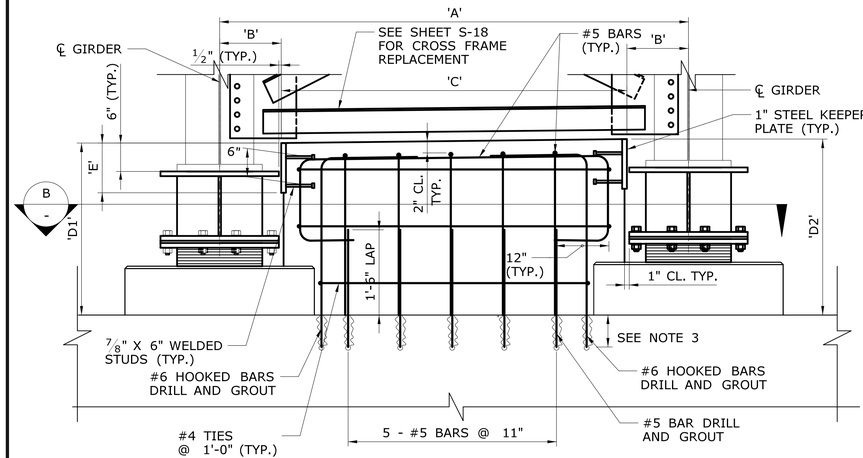

## SECTION A - -

SCALE: 3/4" = 1'-0"



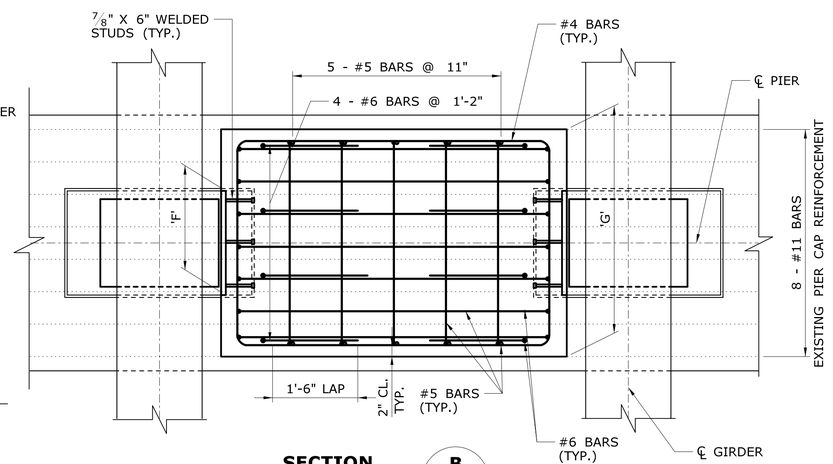

## KEEPER BLOCK 'D' (PIER EB4 PLAN)

SCALE: 1/2" = 1'-0"



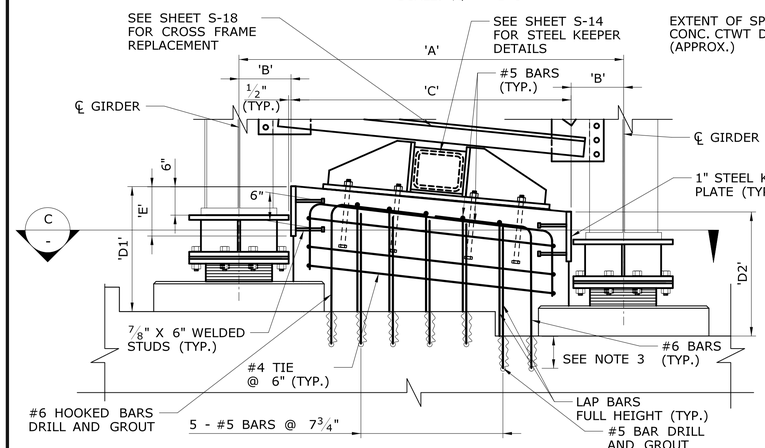

## KEEPER BLOCK 'B' (PIER EB2)

SCALE: 3/4" = 1'-0"



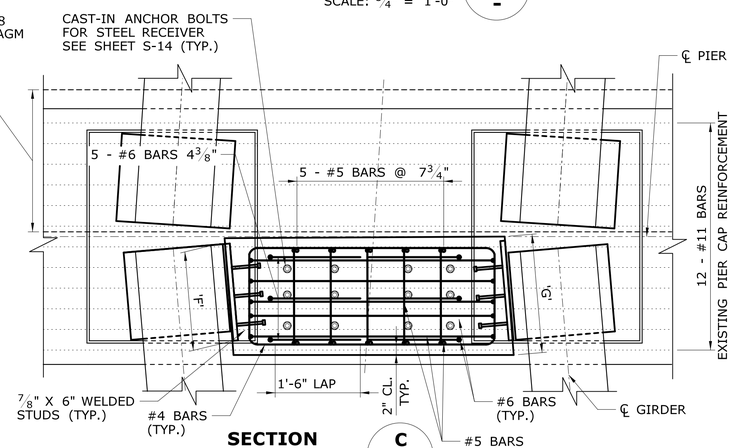

## SECTION B - -

SCALE: 3/4" = 1'-0"




## KEEPER BLOCK 'C' (PIER EB7 WEST)

SCALE: 3/4" = 1'-0" * PIER 4 'D' SIMILAR




## SECTION C - -

SCALE: 3/4" = 1'-0"

## NOTES:

1. KEEPER BLOCK CONCRETE SHALL BE PAID FOR UNDER THE ITEM "CLASS 'F' CONCRETE". KEEPER BLOCK REINFORCEMENT SHALL BE PAID FOR UNDER THE ITEMS "DRILLING HOLES AND GROUTING DOWELS" AND "DEFORMED STEEL BARS"
2. INSTALL KEEPER BLOCKS AFTER BEARING REPLACEMENT IS COMPLETED.
3. DRILLED AND GROUTED DOWELS SHALL BE EMBEDDED SUFFICIENT DEPTH TO DEVELOP THE YIELD STRENGTH OF THE BAR.
4. CONTRACTOR SHALL MEET THE MANUFACTURERS INSTALLATION, SPACING, AND EDGE DISTANCE REQUIREMENTS FOR SELECTED BAR ANCHORING PRODUCT. IN THE EVENT THAT THE PIER CAP LAYOUT DOES NOT ALLOW FOR THE LAYOUT AND EMBEDMENT SHOWN, THE CONTRACTOR MAY ADJUST REINFORCEMENT WITH APPROVAL OF THE ENGINEER.
5. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGING EXISTING REINFORCEMENT. CONTRACTOR SHALL USE A PACHOMETER PRIOR TO DRILLING TO VERIFY THAT NO EXISTING REINFORCEMENT IS IN PLACE THAT MAY INTERFERE WITH HOLE PLACEMENT.
6. ROUGHEN THE SURFACE OF THE EXISTING PIER OR ABUTMENT INCLUDING PEDESTAL PRIOR TO PLACEMENT OF NEW CONCRETE.
7. STEEL PLATES IN KEEPER BLOCKS SHALL CONFORM TO ASTM A709 STEEL AND SHALL RECEIVE ONE COAT OF SHOP APPLIED PRIMER AND TOP COAT OF PAINT. SURFACES TO BE EMBEDDED IN CONCRETE SHALL RECEIVE PRIME COAT ONLY. STEEL PLATES PAID FOR AS "STRUCTURAL STEEL REPAIRS (SITE NO. 2)".
8. EDGES OF KEEPER BLOCKS SHALL BE BEVELED 1"X1".
9. PROTECTIVE COMPOUND FOR BRIDGES SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE KEEPER BLOCKS.
10. SEE SHEETS S-04 TO S-10 FOR KEEPER LOCATIONS AND BEAM SKEWS.

KEEPER BLOCK DETAILS

| LOCATION | A | B | C | D1* | D2* | E | F | G |
|---|---|---|---|---|---|---|---|---|
| PIER EB2 BTW G2-G3 | 8'-3" | 1'-1" | 6'-1" | 3'-3 3/8" | 3'-1 1/8" | 10 1/2" | 1'-10" | 4'-0" |
| PIER EB2 BTW G4-G5 | 8'-3" | 1'-1" | 6'-1" | 3'-2 1/8" | 3'-1 1/4" | 10 1/2" | 1'-10" | 4'-0" |
| PIER EB2 BTW G5-G6 | 8'-3" | 1'-1" | 6'-1" | 3'-1 1/4" | 3'-1/4" | 10 1/2" | 1'-10" | 4'-0" |
| PIER EB2 BTW G7-G8 | 8'-3" | 1'-1" | 6'-1" | 2'-10 5/8" | 2'-9 3/8" | 10 1/2" | 1'-10" | 4'-0" |
| PIER EB4 WEST BTW G3-G4 | 8'-3" | 11" | 6'-5" | 2'-5" | 2'-5 1/2" | 10 1/2" | 1'-10" | 2'-0" |
| PIER EB4 WEST BTW G7-G8 | 8'-3" | 11" | 6'-5" | 2'-2 3/8" | 2'-1" | 10 1/2" | 1'-10" | 2'-0" |
| PIER EB4 EAST BTW G3-G4 | 7'-11 3/8" | 11" | 6'-1 3/8" | 2'-6 3/8" | 2'-6" | 10 1/2" | 1'-10" | 2'-0" |
| PIER EB4 EAST BTW G7-G8 | 7'-7 1/2" | 11" | 5'-9 1/2" | 2'-1 5/8" | 2'-2 7/8" | 10 1/2" | 1'-10" | 2'-0" |
| PIER EB7 WEST BTW G2-G3 | 6'-9 1/4" | 11" | 4'-11 1/4" | 2'-2 3/8" | 2'-2 3/8" | 10 1/2" | 1'-10" | 2'-0" |
| PIER EB7 WEST BTW G4-G5 | 6'-9 1/4" | 11" | 4'-11 1/4" | 2'-2 1/4" | 2'-2 1/8" | 10 1/2" | 1'-10" | 2'-0" |
| PIER EB7 WEST BTW G7-G8 | 6'-9 1/4" | 11" | 4'-11 1/4" | 2'-2" | 2'-2" | 10 1/2" | 1'-10" | 2'-0" |
| ABUT 2-N BTW G3-G4 | 9'-1 1/4" | 1'-1/2" | 7'-1/4" | 1'-8" | 1'-7 3/4" | 10 1/2" | 1'-6" | 1'-8" |
| ABUT 2-N BTW G7-G8 | 9'-1 1/16" | 1'-1/2" | 7'-1/16" | 1'-7 1/4" | 1'-7" | 10 1/2" | 1'-6" | 1'-8" |

* D1 AND D2 ARE BASED ON THE GIRDER BOTTOM ELEVATION PLUS AN ADDITIONAL 6"

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/10/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765_KeeperBlocks1.dgn

SIGNATURE/BLOCK:

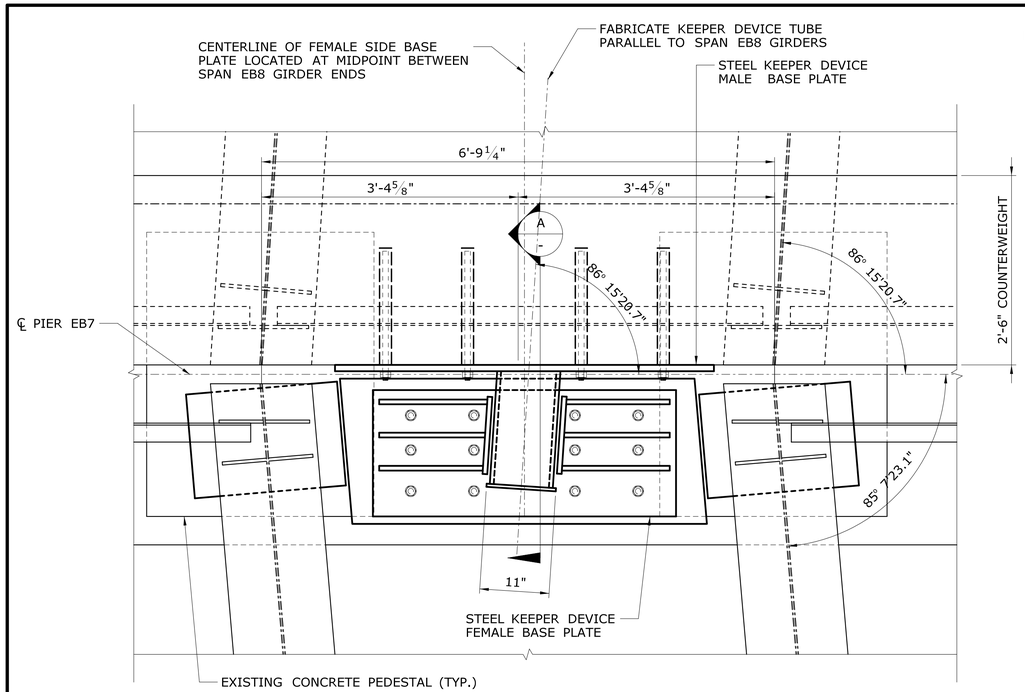
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD

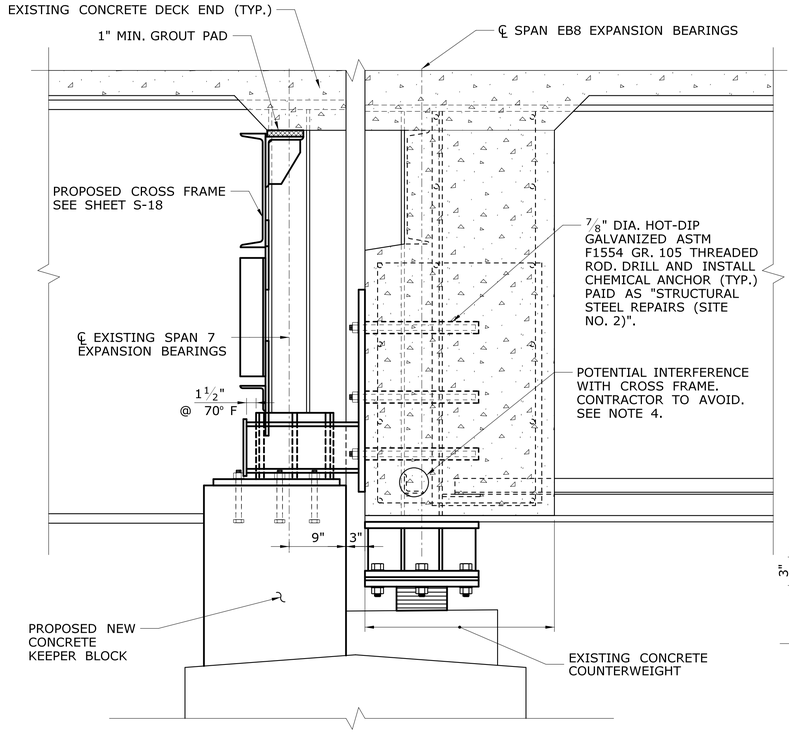
DRAWING TITLE:
KEEPER BLOCK DETAILS - 1

PROJECT NO. 63-700
DRAWING NO. S-13
SHEET NO. 02.04.13



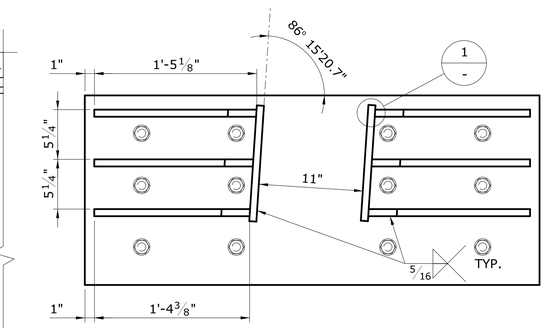

## KEEPER BLOCK PLAN

SCALE: 1" = 1'-0"



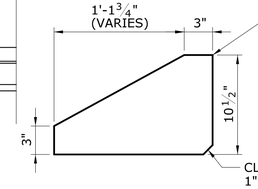

## PIER SECTION A -

SCALE: 1" = 1'-0"



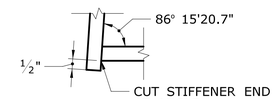

## STEEL KEEPER - FEMALE SIDE

SCALE: 1 1/2" = 1'-0"



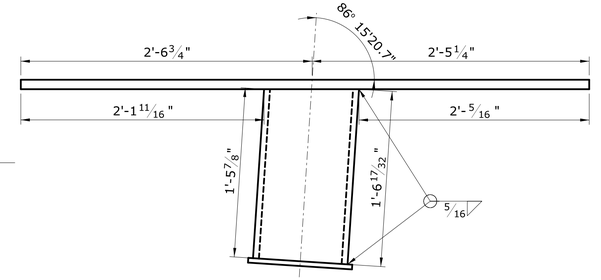

## STIFFENER DETAIL

SCALE: 1 1/2" = 1'-0"



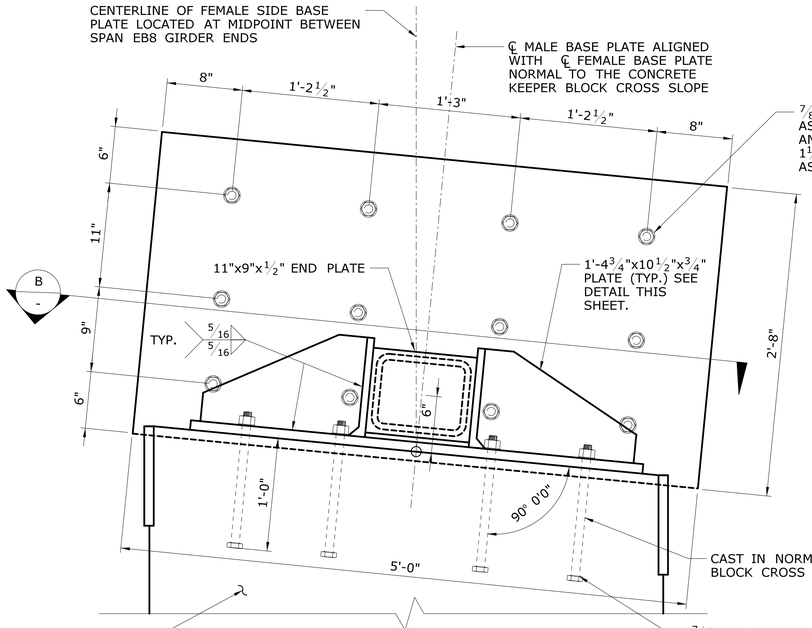

## STIFFENER END DETAIL 1 -

SCALE: 3" = 1'-0"



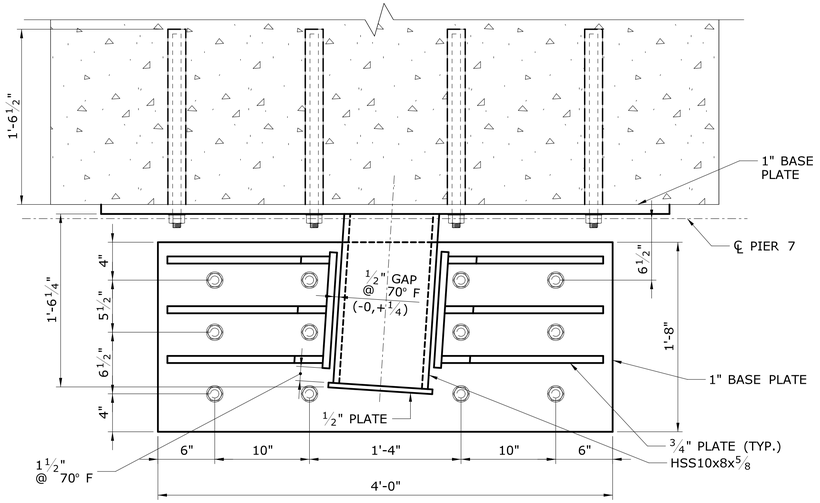

## STEEL KEEPER - MALE SIDE

SCALE: 1 1/2" = 1'-0"




## STEEL KEEPER DETAIL

SCALE: 1 1/2" = 1'-0"




## STEEL KEEPER PLAN B -

SCALE: 1 1/2" = 1'-0"

## NOTES

1. STEEL KEEPER DEVICE ELEMENTS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. STEEL KEEPER SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 2)". SEE SPECIAL PROVISIONS.
2. STEEL KEEPER DEVICE SHALL BE CENTERED BETWEEN SPAN EB8 GIRDER ENDS RELATIVE TO THE FEMALE SIDE BASE PLATE. THE CONTRACTOR SHALL TAKE NOTE THAT THE TUBE EXTENSION ON THE MALE SIDE OF THE KEEPER BLOCK IS ALIGNED PARALLEL TO THE SPAN EB8 GIRDERS AND IS NOT CENTERED ON THE BASE PLATES.
3. WORK THIS SHEET WITH THE CONCRETE KEEPER BLOCKS SHOWN ON SHEET S-13. CAST IN ANCHORS SHALL BE SET NORMAL TO THE TOP OF THE CONCRETE KEEPER.
4. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGING EXISTING REINFORCEMENT IN THE COUNTERWEIGHT. CONTRACTOR SHALL USE A PACHOMETER PRIOR TO DRILLING TO VERIFY THAT NO EXISTING REINFORCEMENT OF CROSS FRAME MEMBERS IS IN PLACE THAT MAY INTERFERE WITH HOLE PLACEMENT.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: DLF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Keeper 2_Boston.dgn

SIGNATURE/BLOCK:

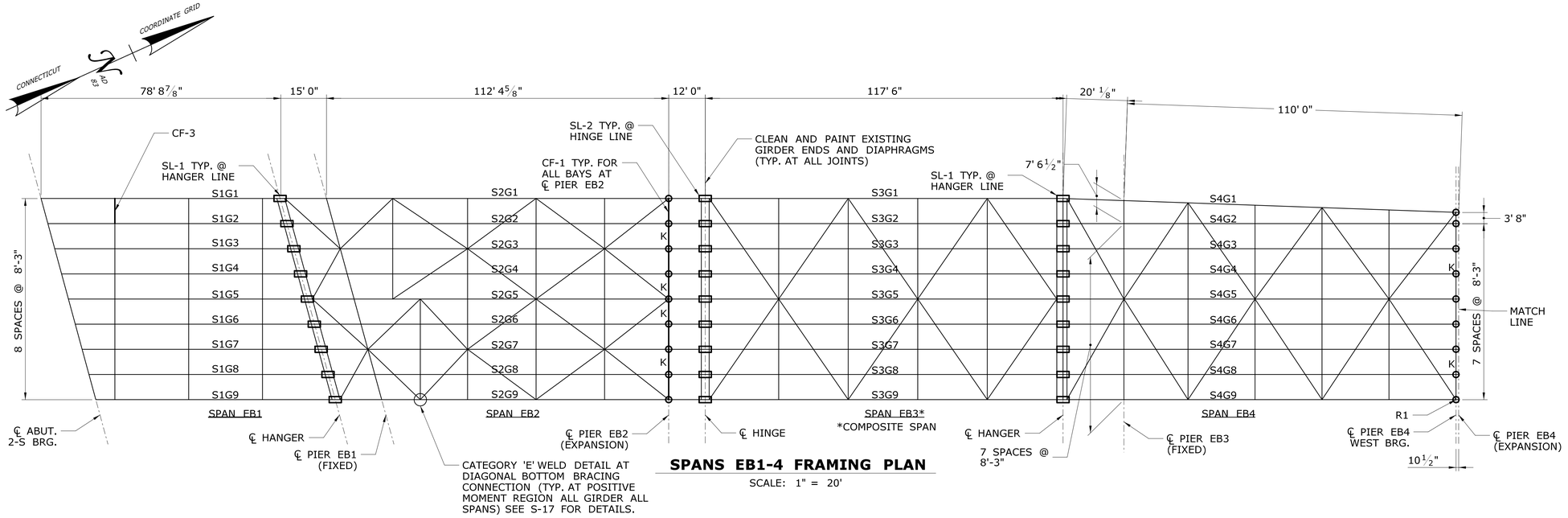
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty &Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

DRAWING TITLE:
**KEEPER BLOCK DETAILS - 2**

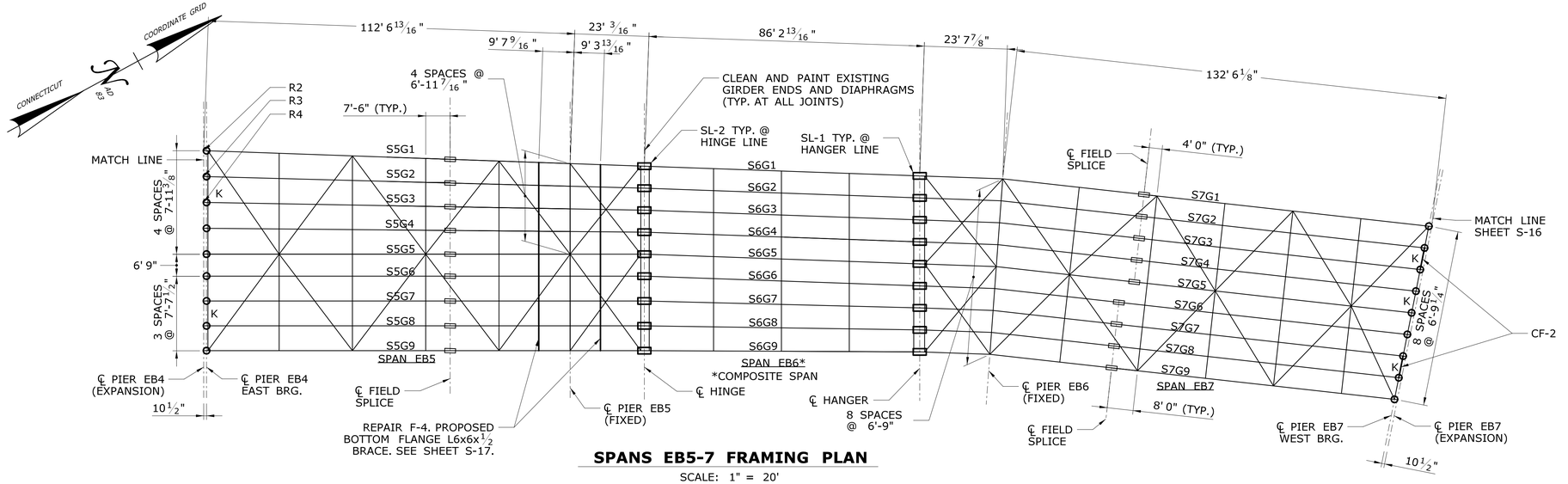
PROJECT NO. **63-700**
DRAWING NO. **S-14**
SHEET NO. **02.04.14**




## SPANS EB1-4 FRAMING PLAN

SCALE: 1" = 20'

NOTE - POSITION OF THE KEEPER BLOCKS MUST BE ADJUSTED WHEN DESIGN FINALIZED




## SPANS EB5-7 FRAMING PLAN

SCALE: 1" = 20'

## FIELD PAINTING NOTES

1. THE ENDS OF EXISTING GIRDERS AND END DIAPHRAGMS/CROSS FRAMES (IN THEIR ENTIRETY) INCLUDING CONNECTION PLATES, BEARING STIFFENERS, AND SUPPORT BRACKETS SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 2)", SEE SPECIAL PROVISIONS. THE CONTAINMENT FOR THE PAINTING SHALL BE PAID UNDER THE ITEM "CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE NO. 2)", SEE SPECIAL PROVISIONS. DISPOSAL OF LEAD DEBRIS SHALL BE PAID UNDER THE ITEM "DISPOSAL OF LEAD DEBRIS FROM ABRASIVE BLAST CLEANING", SEE SPECIAL PROVISIONS.
2. THE 18,580 SQUARE FEET OF ESTIMATED SURFACE AREA OF EXISTING GIRDERS AND END DIAPHRAGMS/CROSS FRAMES TO BE CLEANED & PAINTED IS APPROXIMATE. THE CONTRACTOR SHALL SURVEY THE EXISTING BRIDGE STRUCTURE AND REVIEW THE EXISTING PLANS TO FAMILIARIZE HIMSELF WITH THE AREA TO BE CLEANED AND PAINTED.

## FRAMING PLAN NOTES:

1. PIER DIMENSIONS ARE MEASURED ALONG FASCIA GIRDER G1 EACH SPAN.
2. BEAM NUMBERING CONVENTION BASED ON LATEST INSPECTION REPORTS. NUMBERING DIFFERS FROM ORIGINAL CONTRACT DRAWINGS.

## LEGEND:

K - DENOTES APPROX. LOCATION OF CONCRETE KEEPER - 11

R# - BEAM END REPAIR - 4

SL-# - SEISMIC LOCK RETROFIT - 45

CF-# - CROSS FRAME REPAIR/REPLACEMENT - 12

F-# - STRUCTURE MODIFICATION - 16

○ - BEARING REPLACEMENT - 36

## REFERENCES

1) SEE SHEET S-16 FOR FRAMING PLAN SPANS 8-10
2) SEE SHEETS S-16 TO S-19 FOR STRUCTURAL STEEL REPAIR DETAILS
3) SEE SHEET S-38 FOR PAINTING NOTES AND LIMITS

## EXISTING STRUCTURAL STEEL

1) FOR SPANS EB1 THROUGH EB4, FLANGES, WEBS, AND SPLICE MATERIALS FOR WELDED GIRDERS CONFORMS TO ASTM A36-62T.
2) FOR THE SUSPENDED PORTION OF SPAN EB9 BETWEEN HANGER LINES, WELDED GIRDER WEBS, FLANGES, AND SPLICE MATERIALS CONFORMSTO ASTM A441.
3) FOR ALL SPANS NOT INCLUDED IN NOTES 1 AND 2, FLANGES, WEBS, AND SPLICE MATERIALS FOR WELDED GIRDERS CONFORMS TO ASTM A373.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

Plotted Date: 8/9/2016

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Framing Plan.dgn

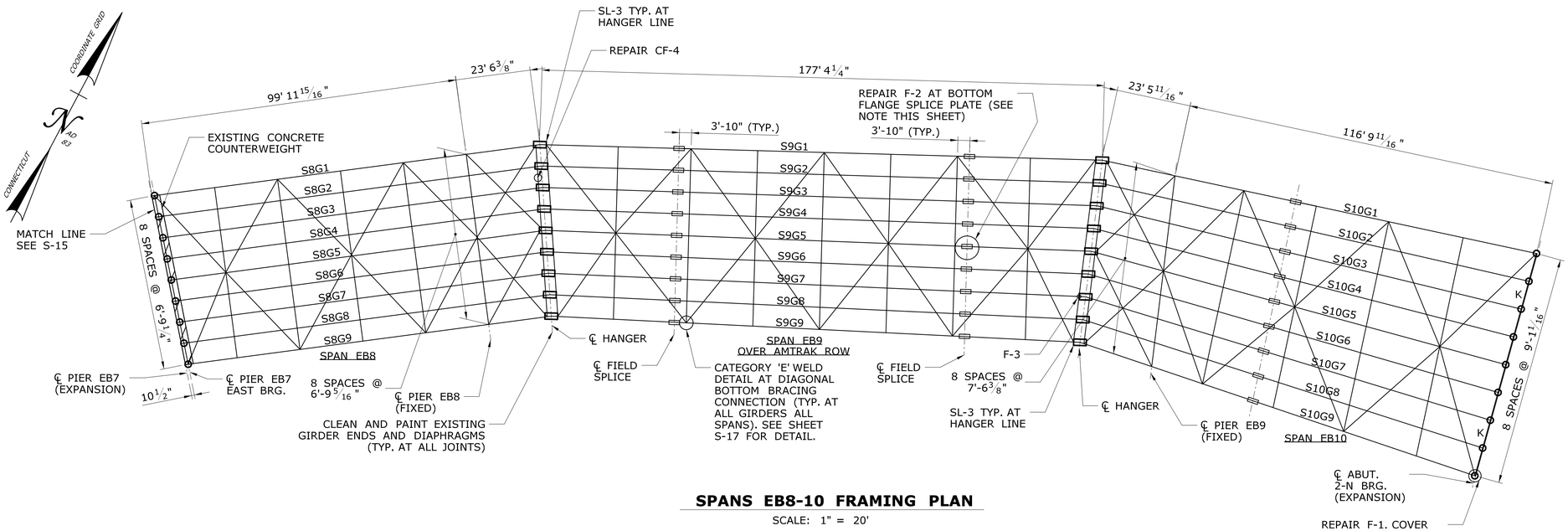
SIGNATURE/BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**
DRAWING TITLE: **FRAMING PLAN - 1**

PROJECT NO. **63-700**
DRAWING NO. **S-15**
SHEET NO. **02.04.15**




## SPANS EB8-10 FRAMING PLAN

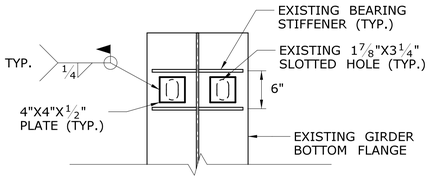
SCALE: 1" = 20'

## EXISTING STRUCTURAL STEEL

1) FOR SPANS EB1 THROUGH EB4, FLANGES, WEBS, AND SPLICE MATERIALS FOR WELDED GIRDERS CONFORMS TO ASTM A36-62T.

2) FOR THE SUSPENDED PORTION OF SPAN EB9 BETWEEN HANGER LINES, WELDED GIRDER WEBS, FLANGES, AND SPLICE MATERIALS CONFORMSTO ASTM A441.

3) FOR ALL SPANS NOT INCLUDED IN NOTES 1 AND 2, FLANGES, WEBS, AND SPLICE MATERIALS FOR WELDED GIRDERS CONFORMS TO ASTM A373.




## FLANGE HOLE REPAIR F-1

SCALE: 1" = 1'-0"

*ABUTMENT 2-N ONLY

## REPAIR F-2 NOTES:

1. INSPECTION REPORTS IDENTIFIED THE PRESENCE OF A 4" WIDE BY 1/8" DEEP GOUGE IN THE BOTTOM FLANGE SPLICE PLATE AT SPAN EB9 GIRDER 5 FIELD SPLICE.
2. THE GOUGE SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION "REPAIR DAMAGED GIRDER".
3. THE GOUGE ON THE SPLICE PLATE SHALL BE GROUND TO A 1/10 SLOPE WITH SMOOTH FINISH. IF THE GOUGE IS FOUND TO BE DEEPER THAN 3/16" THE ENGINEER SHALL BE NOTIFIED, AND A WELDED REPAIR PROCEDURE SHALL BE SUBMITTED FOR APPROVAL.
4. THE REPAIR AREA SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIAL PROVISION "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL". AFTER COMPLETION OF REPAIR.

## LEGEND:

K - DENOTES APPROX. LOCATION OF CONCRETE KEEPER - 2

R# - BEAM END REPAIR - 0

SL-# - SEISMIC LOCK RETROFIT - 18

CF-# - CROSS FRAME REPAIR/REPLACEMENT - 1

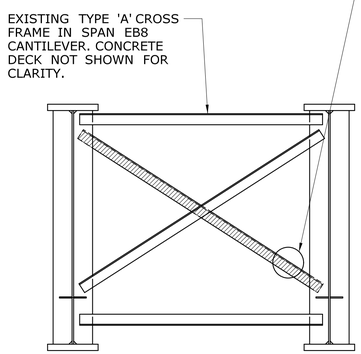
F-# - STRUCTURE MODIFICATION - 10

○ - BEARING REPLACEMENT - 18

## REFERENCES

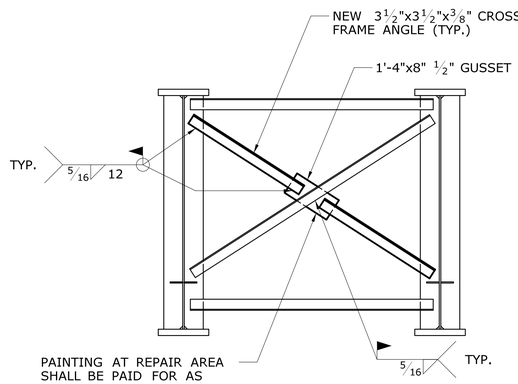
1) SEE SHEET S-15 FOR FRAMING PLAN SPANS EB1-7 AND NOTES

2) SEE SHEETS S-16 TO S-19 FOR STRUCTURAL STEEL REPAIR DETAILS



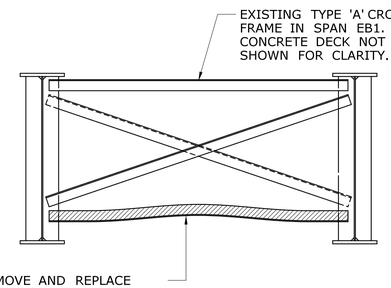

## CROSS FRAME ANGLE INTERFERENCE

SCALE: 1/2" = 1'-0"



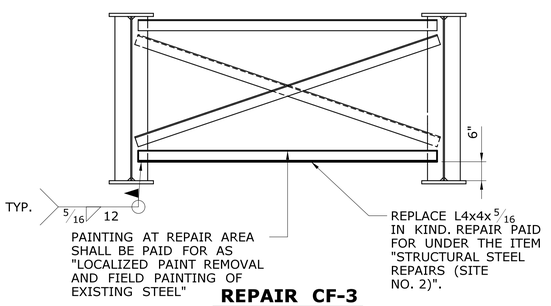

## REPAIR CF-4

SCALE: 1/2" = 1'-0"




## CROSS FRAME IMPACT DAMAGE

SCALE: 1/2" = 1'-0"




## REPAIR CF-3

SCALE: 1/2" = 1'-0"

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Framing Plan.dgn

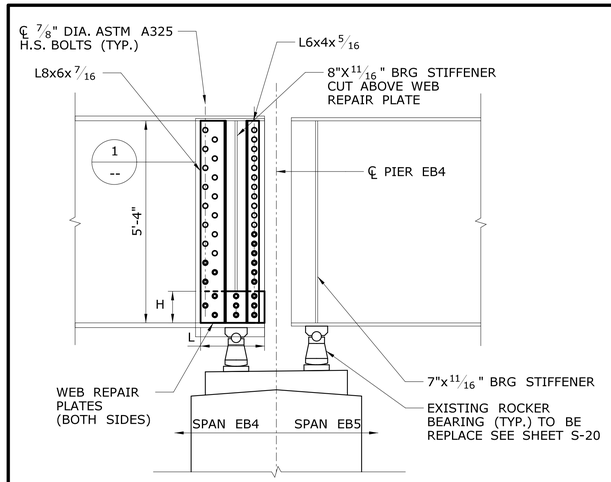
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD
DRAWING TITLE: FRAMING PLAN - 2

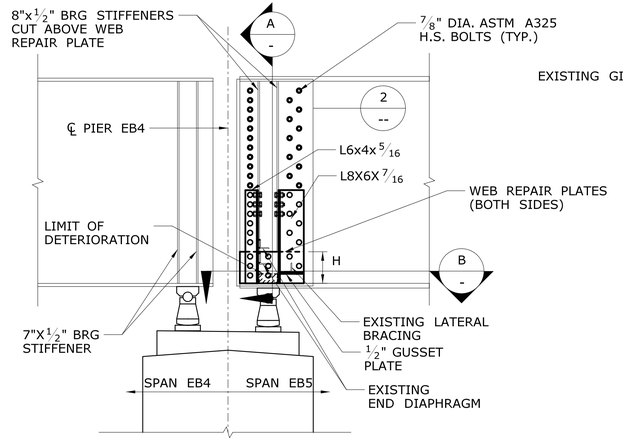
PROJECT NO. 63-700
DRAWING NO. S-16
SHEET NO. 02.04.16




## FASCIA GIRDER EXTERIOR FACE

SCALE: 1/2" = 1'-0"

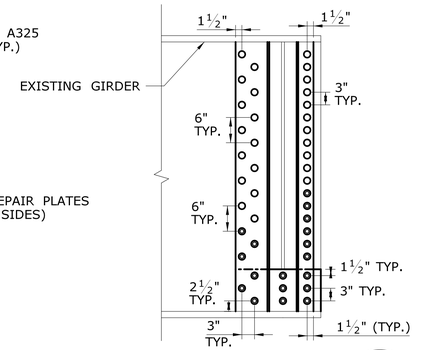
(REPAIR R1 SHOWN, R2 SIMILAR)




## FASCIA GIRDER INTERIOR FACE

SCALE: 1/2" = 1'-0"

(REPAIR R2 SHOWN, R1 SIMILAR)




## REPAIR DETAIL 1

SCALE: 3/4" = 1'-0"

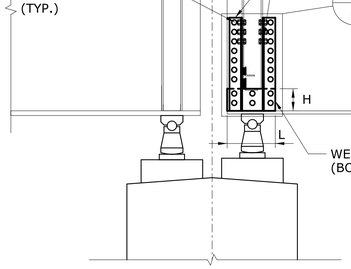
| GIRDER WEB DETERIORATION TABLE | | | | | | |
|---|---|---|---|---|---|---|
| PIER | SPAN | INTERIOR/FASCIA GIRDER | GIRDER | WEB REPAIR PLATE | | FRAMING PLAN REPAIR ID |
| | | | | L (IN) | H (IN) | |
| EB4 | EB4 | FASCIA | 9 | 20 1/4 | 10 | R1 |
| EB4 | EB5 | FASCIA | 1 | 20 1/4 | 7 | R2 |
| EB4 | EB5 | INTERIOR | 2 | 15 1/4 | 7 | R3 |
| EB4 | EB5 | INTERIOR | 3 | 15 1/4 | 7 | R4 |

## STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL (LOW ALLOY) SHALL CONFORM TO ASTM A709, GRADE 50 T2.
2. WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE ANSI/AASHTO/AWS D1.5 - BRIDGE WELDING CODE (CURRENT EDITION), UNLESS OTHERWISE NOTED ON THE PLAN.
3. ALL WELDS SHALL REQUIRE MAGNETIC PARTICLE TESTING.
4. MULTIPLE PASS WELDS, INSPECTED BY THE MAGNETIC PARTICLE METHOD SHALL HAVE EACH PASS OR LAYER INSPECTED AND ACCEPTED BEFORE PROCEEDING TO THE NEXT PASS OR LAYER, AS DETERMINED BY THE ENGINEER.
5. ALL BOLTED CONNECTIONS OF STRUCTURAL STEEL SHALL BE 7/8" DIAMETER ASTM A325 TYPE I HIGH STRENGTH BOLTS, IN 15/16" DIAMETER HOLES, INSTALLED AS FRICTION TYPE CONNECTIONS, UNLESS OTHERWISE NOTED. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANES. BOLTS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.

## WEB REPAIR NOTES:

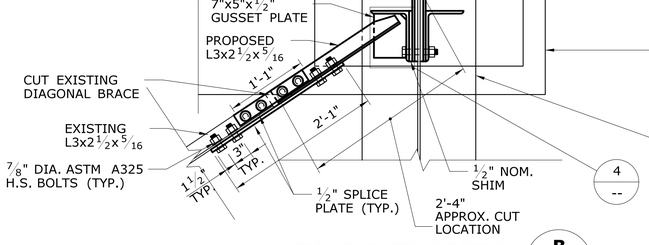
1. THE CONTRACTOR AND RESIDENT SHALL JOINTLY INSPECT THE ENDS OF ALL GIRDERS AFTER ABRASIVE BLAST CLEANING AND REPAIR ALL AREAS WITH ANY SECTION LOSS AT RESIDENT ENGINEER'S DIRECTION. SEE GIRDER WEB DETERIORATION TABLE FOR LOCATIONS OF GIRDERS WITH MAJOR SECTION LOSS. ADDITIONAL REPAIR LOCATIONS MAY BE REQUIRED DEPENDING ON EXISTING FIELD CONDITIONS.
2. MAJOR SECTION LOSS IS DEFINED AS A 25% REDUCTION IN AS-BUILT WEB AREA IN THE BEARING AREA OR 25% REDUCTION MAXIMUM IN SHEAR LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL SUCH LOCATIONS.
3. LIMITS OF WEB REPAIR SHALL BE CONFINED WITHIN A DISTANCE OF 2 TIMES THE DEPTH OF THE MEMBER FROM THE CENTERLINE OF THE BEARING.
4. THE FILL PLATE THICKNESS SHALL EQUAL THE RADIUS OF THE FILLET OF THE PLATE GIRDER.
5. ONLY ONE REPAIR SHALL BE DONE AT A TIME.
6. HOLES IN REPAIR PLATES AND FILL PLATES SHALL BE SHOP DRILLED. FIELD DRILLING OF HOLES IN THE BEAMS SHALL BE DONE ONE AT A TIME AND A BOLT SHALL BE IMMEDIATELY INSTALLED IN THE HOLE. NO MORE THAN ONE EMPTY HOLE SHALL BE ALLOWED AT ANY GIVEN TIME.
7. PERIMETER OF NEW WEB REPAIR PLATES SHALL BE CAULKED WITH A PAINTABLE CAULK PER SPECIFICATIONS.
8. MAXIMUM EDGE DISTANCE TO THE CENTERLINE OF BOLTS SHALL NOT EXCEED 3 INCHES.
9. REPAIR PLATE TO EXTEND A MINIMUM OF 3 INCHES BEYOND LIMITS OF DETERIORATION.
10. BEARING WEB REPAIRS ARE SHOWN COMPLETED PRIOR TO JACKING OF THE STRUCTURE FOR BEARING REPLACEMENT. THE CONTRACTOR MAY PERFORM REPAIRS AFTER JACKING AND BEFORE BEFORE BEARINGS ARE INSTALLED. SEE SHEET S-22 FOR JACKING REQUIREMENTS. STRENTHENING FOR JACKING NOT SHOWN.
11. ALL WORK TO REPAIR GIRDER WEBS IDENTIFIED ON THIS SHEET SHALL BE PAID FOR AS "STRUCTURAL STEEL REPAIRS (SITE NO. 2)". THIS ITEM SHALL ALSO BE USED TO PAY FOR ADDITIONAL AREAS REPAIRED AT THE RESIDENT ENGINEER'S DIRECTION.




## INTERIOR GIRDER

SCALE: 1/2" = 1'-0"

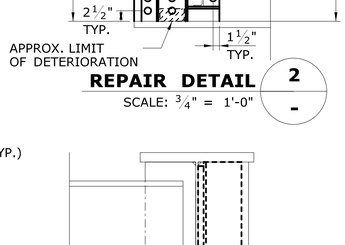
(REPAIRS R3, R4)




## WEB REPAIR SECTION B

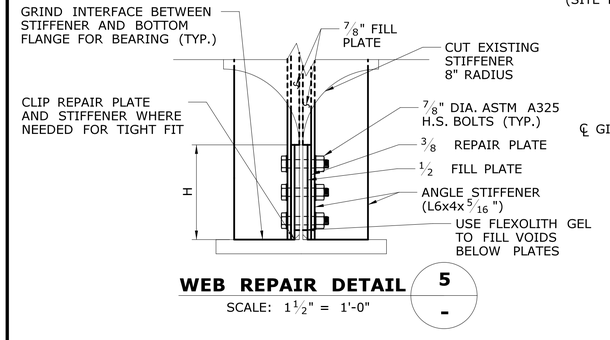
SCALE: 1" = 1'-0"

(REPAIR R2 SHOWN, R1 SIMILAR)



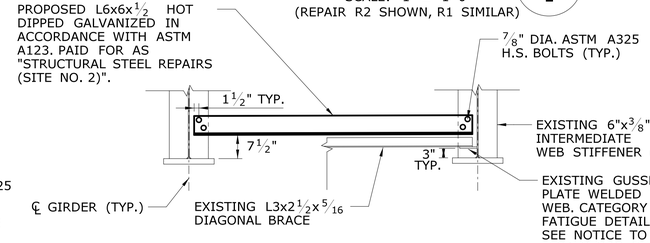

## REPAIR DETAIL 2

SCALE: 3/4" = 1'-0"




## WEB REPAIR DETAIL 5

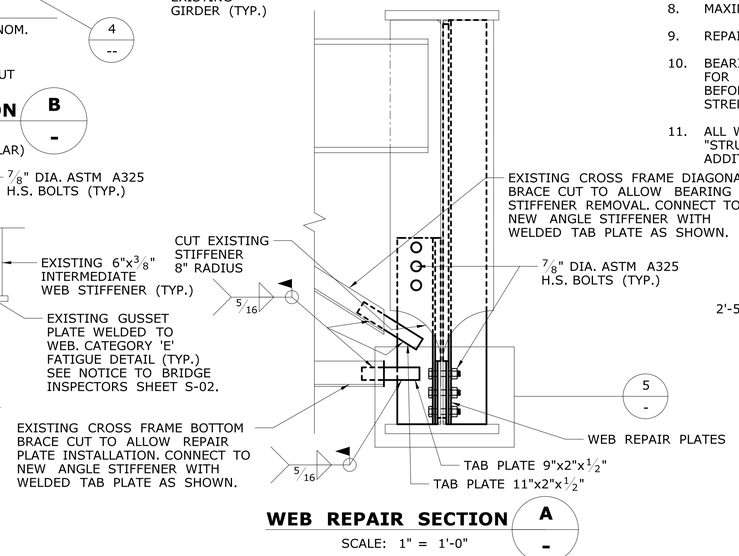
SCALE: 1 1/2" = 1'-0"




## BOTTOM FLANGE REPAIR F-4

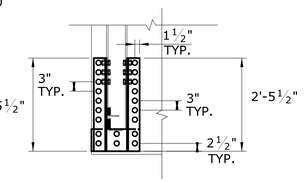
SCALE: 1/2" = 1'-0"

* IN ALL BAYS ADJACENT TO SPAN EB5. SEE FRAMING PLAN FOR LOCATION



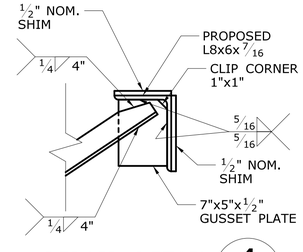

## WEB REPAIR SECTION A

SCALE: 1" = 1'-0"




## REPAIR DETAIL 3

SCALE: 1/2" = 1'-0"




## REPAIR DETAIL 4

SCALE: 1 1/2" = 1'-0"

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF

CHECKED BY: BSH

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Beam End Corrosion.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:

**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

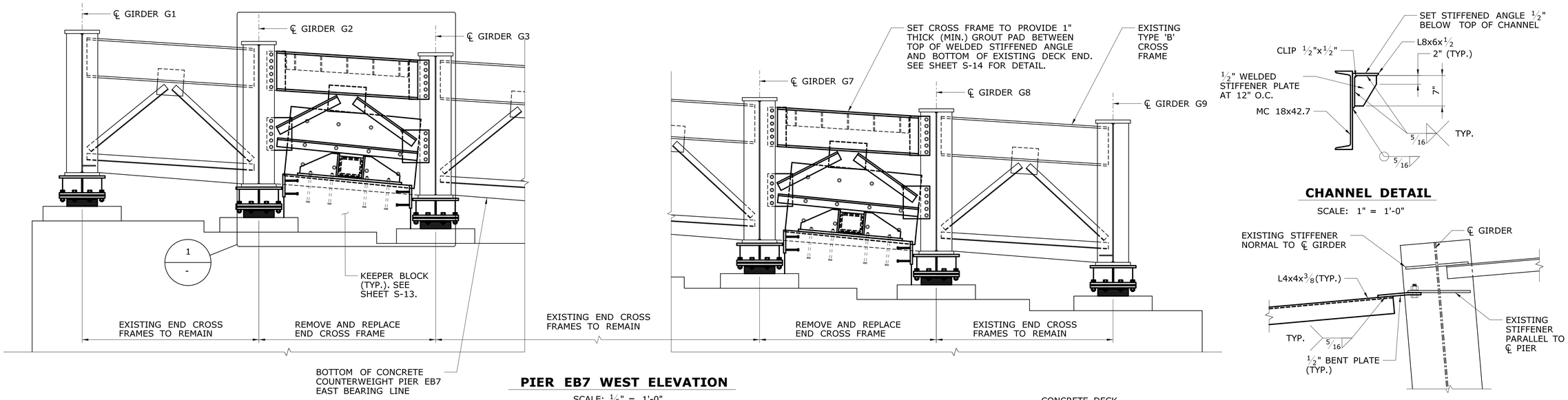
TOWN: **HARTFORD**

DRAWING TITLE: **STRUCTURAL STEEL REPAIRS - 1**

PROJECT NO. **63-700**

DRAWING NO. **S-17**

SHEET NO. **02.04.17**




## PIER EB7 WEST ELEVATION

SCALE: 1/2" = 1'-0"



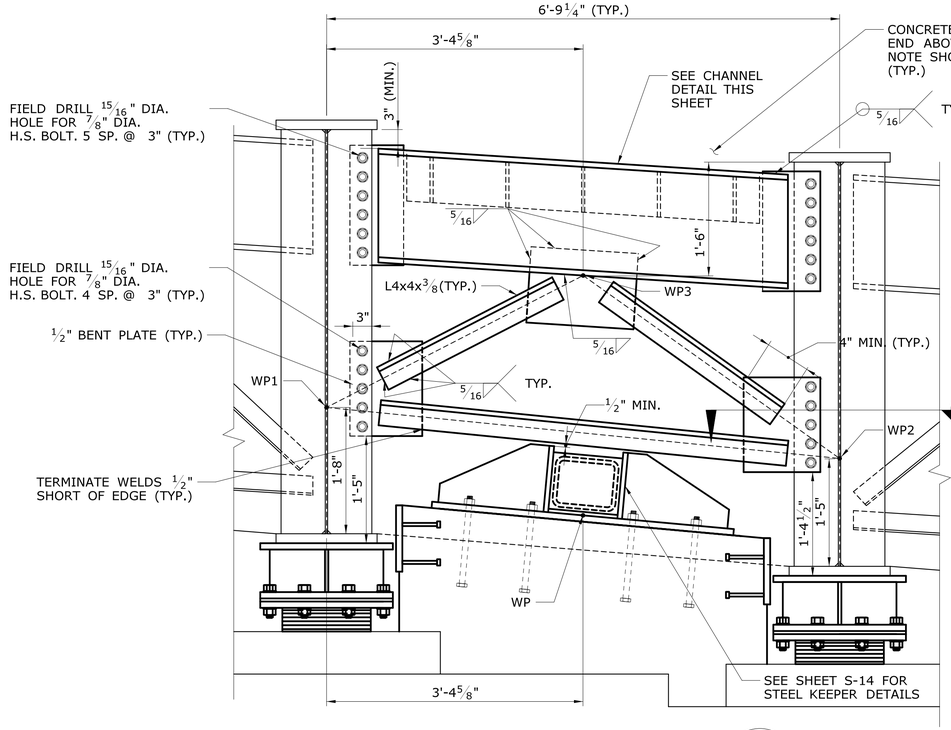

## CHANNEL DETAIL

SCALE: 1" = 1'-0"



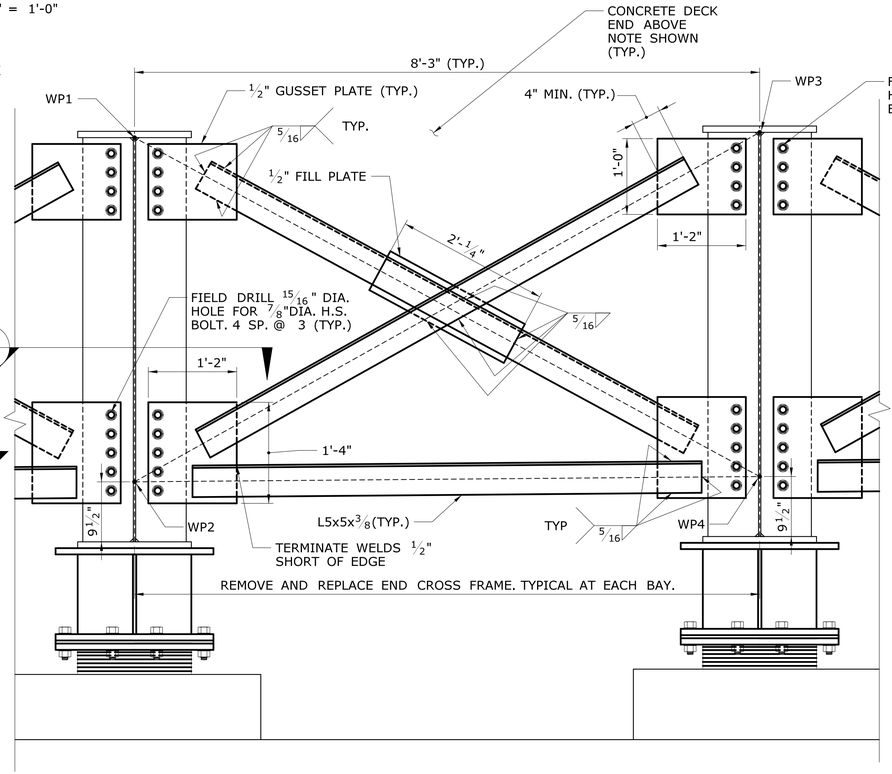

## SECTION A-A

SCALE: 1" = 1'-0"



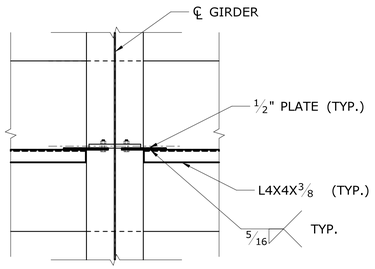

## CROSS FRAME REPLACEMENT CF-2

SCALE: 1" = 1'-0"




## CROSS FRAME REPLACEMENT CF-1

SCALE: 1" = 1'-0"




## SECTION A-A

SCALE: 1" = 1'-0"

## NOTES:

1. CROSS FRAME REPLACEMENT CF-1 TO OCCUR AFTER BEARING AND KEEPER BLOCK REPLACEMENT.
2. CROSS FRAME REPLACEMENT CF-2 TO BE COMPLETED PRIOR TO STRUCTURE JACKING AND BEARING REPLACEMENT AT PIER EB2.
3. CROSS FRAME ELEMENTS SHALL BE PAINTED WITH A TWO COAT PAINT SYSTEM PER THE SPECIAL PROVISION "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 2)". CROSS FRAMES SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 2)". SEE SPECIAL PROVISIONS.
4. SEE SHEET S-13 AND S-14 FOR KEEPER BLOCKS.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: DLF
CHECKED BY: SDH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Structural Steel Repairs - 2.dgn

SIGNATURE/ BLOCK:

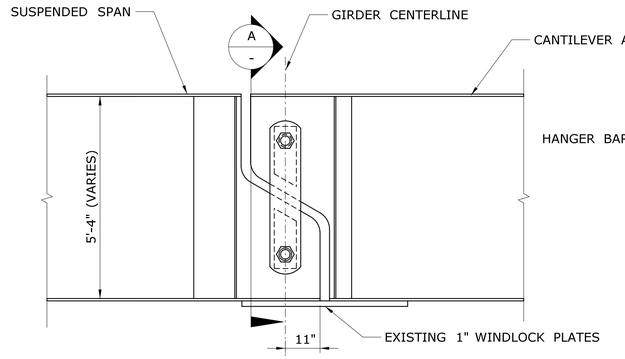
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

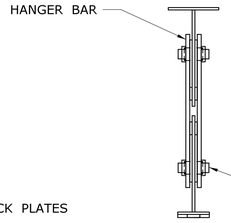
DRAWING TITLE:
**STRUCTURAL STEEL REPAIRS - 2**

PROJECT NO. **63-700**
DRAWING NO. **S-18**
SHEET NO. **02.04.18**




## EXISTING HANGER DETAIL (SPAN EB6 SHOWN)

SCALE: ½" = 1'-0"




## GIRDER SECTION

SCALE: ½" = 1'-0"

A
-

| TABLE A | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| WIND LOCK PLATES SCHEDULE | | | | | | | | | |
| Type | Span # | Quantity PL | # of Girders | Length (Male) | Length (Female) | Width | Flange Thickness (W. Conn.) | Thickness (E. Conn.) | Plate Thickness |
| SL-1 | 1 | 18 | 5 | 1'-6" | 2'-5" | 1'2" | 1" | 1-1/2" | 1" |
| SL-2 | 3W | 18 | 9 | 1'-6" | 2'-5" | 1' 6" | 1-1/2" | 1-1/4" | 1-1/4" |
| SL-1 | 3E | 18 | 5 | 1'-6" | 2'-5" | 1' 6" | 1-3/4" | 1-3/4" | 1" |
| SL-2 | 6W | 18 | 9 | 1'-6" | 2'-5" | 1'0" | 1-3/4" | 1-1/2" | 1-1/4" |
| SL-1 | 6E | 18 | 5 | 1'-6" | 2'-5" | 1'0" | 7/8" | 1-3/4" | 1-7/8" |
| SL-3 | 9W | 18 | 9 | *varies | *varies | *varies | 1-3/4" | 1-1/4" | 1" |
| SL-3 | 9E | 18 | 9 | *varies | *varies | *varies | 1-1/4" | 1-1/4" | 1" |
| *SEE WIND LOCK PLATE DETAILS THIS SHEET | | | | | | | | | |

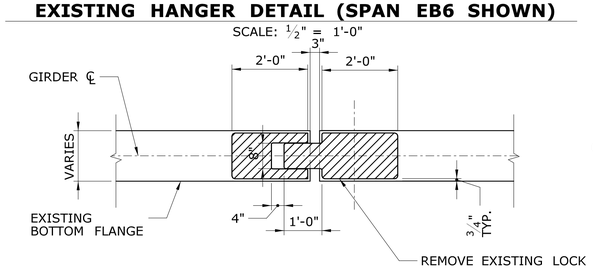
NOTE: THE SPAN DESIGNATION "W" SHALL BE THE END OF THE SPAN THAT IS DOWNSTATION FROM THE END DESIGNATION "E".

GIRDER FLANGE THICKNESS MAY VARY PER HANGER LINE. FIELD VERIFY.

| TABLE B | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOCATION | | DEFLECTION ANGLE | | | | | | | | | | |
| SPAN | HANGER | G1 | G2 | G3 | G4 | G5 | G6 | G7 | G8 | G9 | G10 | G11 |
| 2 | WEST | 0 | 0.52 | 1.04 | 1.67 | 2.09 | 2.6 | 3.11 | 3.62 | 4.12 | 4.12 | 4.12 |
| 2 | EAST | 4.04 | 4.42 | 4.72 | 5.19 | 5.59 | 5.99 | 6.39 | 6.81 | 7.23 | 7.22 | 7.22 |
| 5 | WEST | 9.21 | 9.18 | 9.28 | 9.08 | 9.19 | 9.2 | 9.19 | 9.19 | 9.19 | 9.19 | 9.19 |
| 5 | EAST | 8.17 | 8.68 | 9.19 | 9.72 | 9.72 | 9.72 | 9.72 | 9.72 | 9.72 | 9.72 | 9.72 |

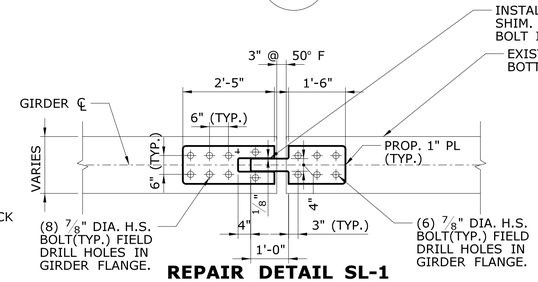
## NOTES:

1. NEW SEISMIC LOCKS SHALL BE INSTALLED AT ALL HANGER AND HINGE GIRDER ENDS. EXISTING SKEWED GIRDER WIND LOCKS SHALL BE REMOVED AND REPLACED AS SHOWN. PROPOSED SEISMIC LOCKS SHOWN SHALL BE PAID FOR AS "STRUCTURAL STEEL REPAIRS (SITE NO. 2)".
2. SEISMIC LOCK STRUCTURAL STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. SIZE AND SHAPE OF PROPOSED SEISMIC LOCK MAY VARY TO SUIT FIELD CONDITIONS. THE CONTRACTOR SHALL DETERMINE ACTUAL CONFIGURATION BASED ON FIELD MEASUREMENTS PRIOR TO FABRICATION. APPROXIMATE DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL CONTRACT PLAN DIMENSIONS.
4. STIFFENER SIZE AND LOCATION MAY VARY AT DIFFERENT LOCATIONS. HANGER PLATE DIMENSIONS ARE UNIQUE IN EACH SPAN. FIELD VERIFY BOLT CLEARANCE TO EXISTING ELEMENTS.
5. LOCALLY CLEAN GIRDER ENDS PER THE SPECIAL PROVISION "ABRASIVE BLAST CLEAN AND FIELD PAINTING OF BEAM ENDS (SITE NO. 2)" PRIOR TO REMOVING EXISTING WIND LOCKS AT ALL GIRDERS AT SPAN EB9 HANGERS (EAST AND WEST). GRIND SMOOTH REMAINING EXISTING WELDS AFTER WINDLOCK REMOVAL
6. THERE ARE NO EXISTING WIND LOCKS PRESENT AT HINGE LOCATIONS. NEW SEISMIC LOCKS ARE PROPOSED AT ALL GIRDER ENDS ALONG HINGE LINES.
7. PROVIDE ⅛" CLEARANCE BETWEEN MALE AND FEMALE LOCK ELEMENTS (EACH SIDE). WHERE GIRDERS ARE SKEWED THE GAP SHALL BE ALIGNED WITH THE SUSPENDED GIRDER.
8. ANY EXISTING WIND LOCKS NOT IDENTIFIED FOR REMOVAL AND REPLACEMENT SHALL BE REMOVED AS NECESSARY TO FACILITATE ANY GIRDER REPAIRS IN THE VICINITY.
9. REMOVAL OF THE EXISTING WIND LOCKS IS INCIDENTAL TO THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 2)".
10. GIRDER FLANGE REPAIR F-1 SHALL BE PAID FOR UNDER THE ITEM "REPAIR EXISTING GIRDER". SEE SPECIAL PROVISIONS.
11. SEE FRAMING PLANS ON SHEETS S-15 AND S-16 FOR LOCATION OF SEISMIC LOCKS.
12. SEE SHEET S-38 FOR FIELD PAINTING REQUIREMENTS.



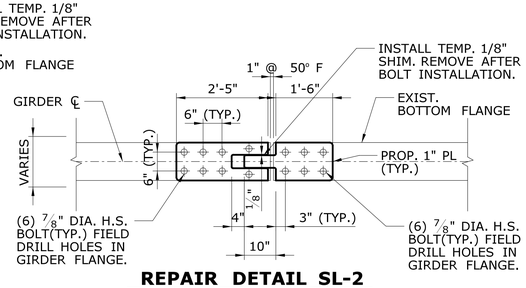

## EXISTING WIND LOCK (SPAN EB1, 3E, 6E) G2, G4, G6, & G8

SCALE: ½" = 1'-0"



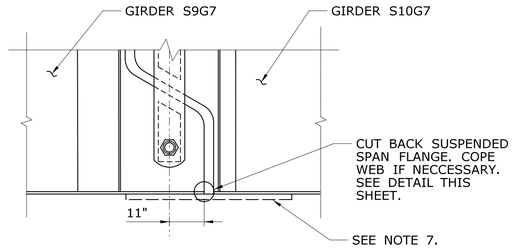

## REPAIR DETAIL SL-1 SPANS EB1, 3E, & 6E G1-G9 HANGERS

NOTE: SPAN EB3 EAST SHOWN
SCALE: ½" = 1'-0"



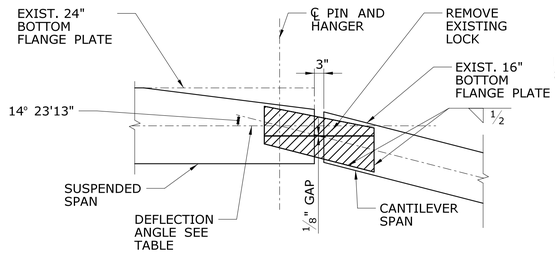

## REPAIR DETAIL SL-2 SPANS EB3W & 6W G1-G9 HINGES

NOTE: SPAN 6 WEST SHOWN
SCALE: ½" = 1'-0"



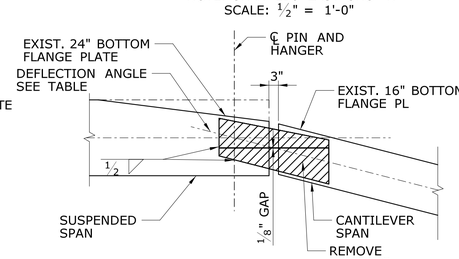

## REPAIR DETAIL F-3

SCALE: ½" = 1'-0"



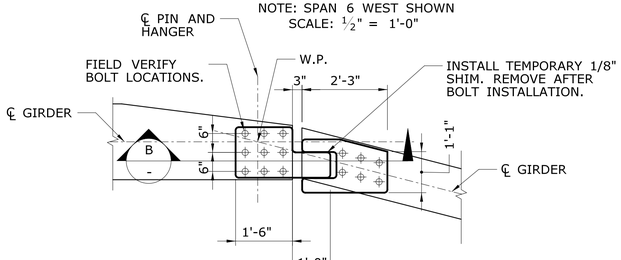

## TYPICAL EXISTING WIND LOCK SPAN EB9 G2 & G6

SCALE: ½" = 1'-0"



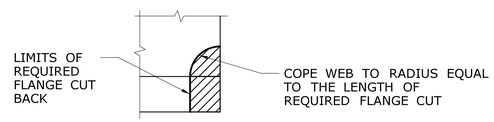

## TYPICAL EXISTING WIND LOCK SPAN EB9 G4 & G8

SCALE: ½" = 1'-0"



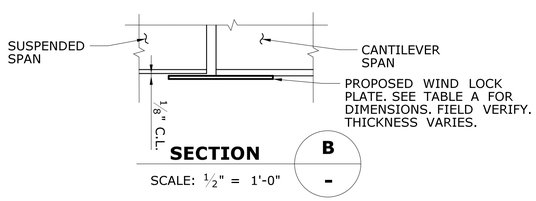

## REPAIR DETAIL SL-3 G1-G9 SKEWED HANGERS

SCALE: ½" = 1'-0"



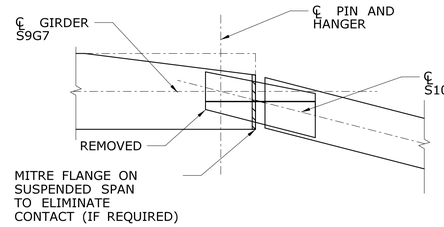

## FLANGE CUTBACK DETAIL

N.T.S.



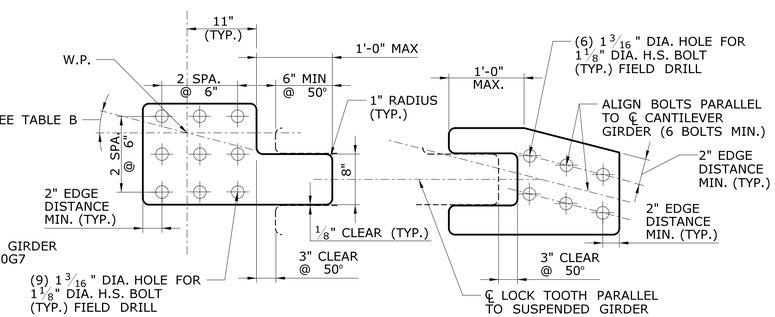

## SECTION

SCALE: ½" = 1'-0"




## REPAIR DETAIL F-3

SCALE: ½" = 1'-0"




## WIND LOCK PLATE DETAILS*

SCALE: 1' = 1'-0"
NOTE: ADJUST BOLT SPACING TO SUIT EXISTING STIFFENER POSITION.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: NMG
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Structural Steel Repairs - Seismic Locks.dgn

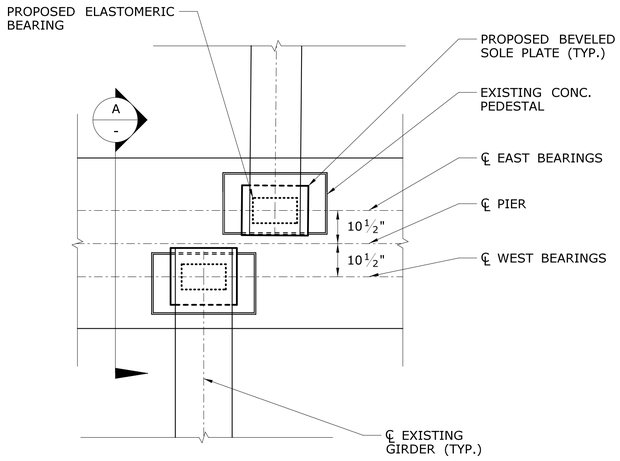
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

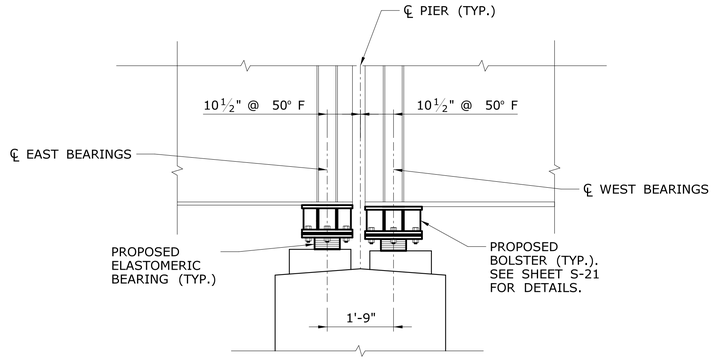
TOWN: HARTFORD
DRAWING TITLE: STRUCTURAL STEEL REPAIRS - 3

PROJECT NO. 63-700
DRAWING NO. S-19
SHEET NO. 02.04.19




## PROPOSED ELASTOMERIC BEARING PLAN AT PIER EB4 (TYP.)

SCALE: ½" = 1'-0"




## PIER EB4 SECTION

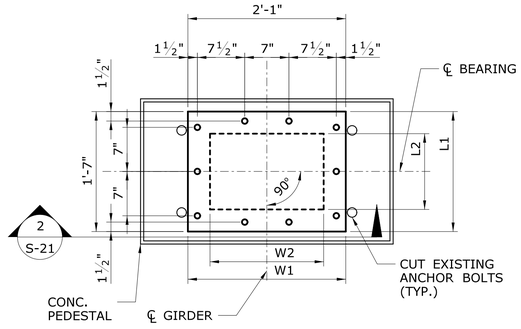
SCALE: ½" = 1'-0"

A
-

| PROPOSED ELASTOMERIC EXPANSION BEARINGS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LOCATION | GIRDER NO | LOAD PLATES | | ELASTOMERIC PAD SIZE | | ELASTOMERIC PAD THICKNESS | STEEL LAMINATE THICKNESS | # OF INTERNAL ELASTOMER LAYERS |
| | | L1 (IN) | W1 (IN) | L2 (IN) | W2 (IN) | A (IN) | (IN) | |
| PIER EB2 | G1 - G9 | 19 | 25 | 12 | 18 | 5⅞ | ⅛ | 9 |
| PIER EB4 WEST | G1 - G9 | 18 | 21 | 10 | 14 | 4⅝ | ⅛ | 7 |
| PIER EB4 EAST | G1 - G9 | 18 | 21 | 10 | 14 | 4⅝ | ⅛ | 7 |
| PIER EB7 WEST | G1 - G9 | 18 | 24 | 10 | 16 | 4⅝ | ⅛ | 7 |
| PIER EB7 EAST | G1 - G9 | 18 | 21 | 10 | 14 | 4 | ⅛ | 6 |
| ABUTMENT 2-N | G1 - G9 | 18 | 24 | 10 | 16 | 3⅜" | ⅛ | 5 |

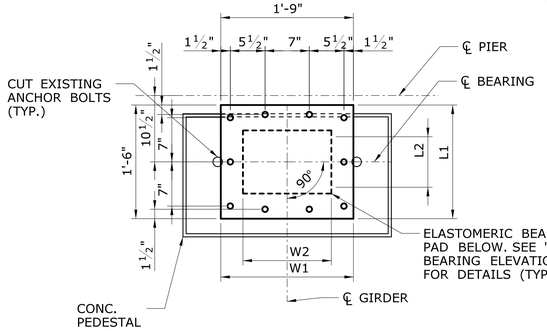
| EXTERIOR ELASTOMERIC BEARING DESIGN LOADS (SERVICE) | | | |
|---|---|---|---|
| | MAX. DL (KIPS) | MAX. LL + I (KIPS) | MIN. LL + I (KIPS) |
| PIER EB2 | 199 | 96 | -8 |
| PIER EB4 WEST | 67 | 64 | -13 |
| PIER EB4 EAST | 71 | 63 | -13 |
| PIER EB7 WEST | 100 | 79 | -13 |
| PIER EB7 EAST | 44 | 71 | -22 |
| ABUTMENT 2-N | 68 | 81 | -21 |

| INTERIOR ELASTOMERIC BEARING DESIGN LOADS (SERVICE) | | | |
|---|---|---|---|
| | MAX. DL (KIPS) | MAX. LL + I (KIPS) | MIN. LL + I (KIPS) |
| PIER EB2 | 215 | 154 | -13 |
| PIER EB4 WEST | 72 | 102 | -21 |
| PIER EB4 EAST | 76 | 100 | -20 |
| PIER EB7 WEST | 91 | 96 | -16 |
| PIER EB7 EAST | 46 | 86 | -27 |
| ABUTMENT 2-N | 69 | 95 | -24 |




## LOAD PLATE PLAN (PIER EB2)

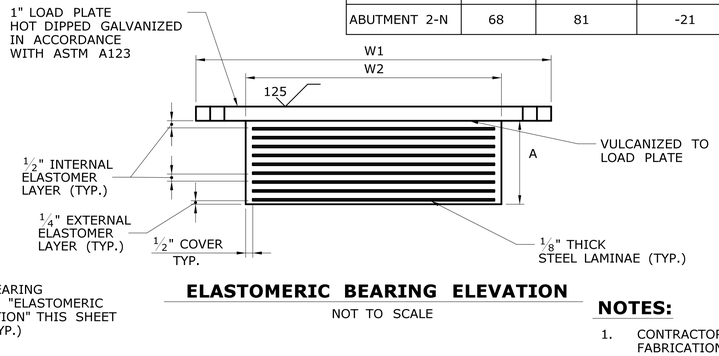
SCALE: 1" = 1'-0"




## LOAD PLATE PLAN (PIERS EB4 WEST, EB7 WEST*)

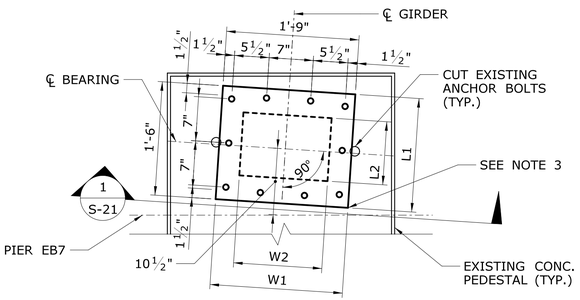
SCALE: 1" = 1'-0"

* PIER EB7 WEST HAS A COMBINED EAST/WEST PEDESTAL. SEE PIER EB7 EAST DETAIL FOR PEDESTAL.



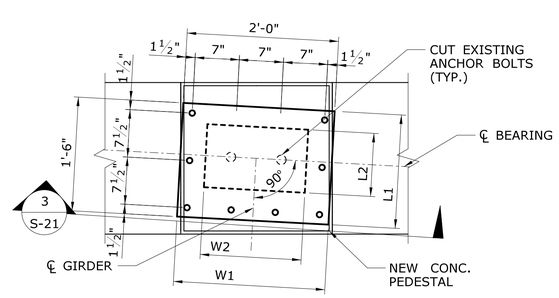

## ELASTOMERIC BEARING ELEVATION

NOT TO SCALE



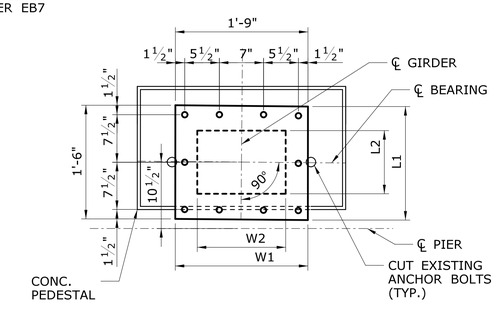

## LOAD PLATE PLAN (PIER EB7 EAST)

SCALE: 1" = 1'-0"




## LOAD PLATE PLAN (ABUTMENT 2-N)

SCALE: 1" = 1'-0"




## LOAD PLATE PLAN (PIER EB4 EAST)

SCALE: 1" = 1'-0"

## NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING BEARING HEIGHTS PRIOR TO FABRICATION OF EXPANSION BEARINGS TO CONFIRM REQUIRED FILLER PLATE DIMENSIONS.
2. FOR PROPOSED CONCRETE KEEPER BLOCK LOCATIONS, SEE SHEETS S-04 - S-10, S-15, AND S-16.
3. CLIP SOLE PLATE, BOLSTER, AND LOAD PLATE CORNERS TO AVOID CONFLICT WITH BEAMS FROM THE OPPOSITE DIRECTION. CLEAR DISTANCE FROM PROPOSED BEARING PLATES TO EXISTING FIXED BEARING OR CONCRETE BEARING PAD SHALL BE NO LESS THAN EXISTING CLEAR DISTANCE. SHOW CLEARANCE ON SHOP DRAWINGS.
4. REINFORCED RECTANGULAR ELASTOMERIC BEARING PADS DESIGNED PER REQUIREMENTS OF AASHTO LRFD SECTION 14, METHOD B.
5. ELASTOMERIC BEARING PADS SHALL BE LOW TEMPERATURE GRADE 3, 60 DUROMETER (SHORE A) ELASTOMER, WITH A SHEAR MODULUS OF 0.160KSI AT 73° F.
6. STEEL LAMINATE SHALL CONFORM TO ASTM A709, GRADE 36 OR ENGINEER APPROVED EQUIVALENT.
7. THE TOP SURFACE OF THE NEW SOLE PLATE SHALL BE BEVELED TO MATCH SLOPE OF THE BOTTOM FLANGE OF GIRDER AFTER THE APPLICATION OF FULL DEAD LOAD. SLOPE TO BE PROVIDED ON SHOP DRAWINGS.
8. FURNISHING AND FABRICATING ELASTOMERIC BEARING PAD AND STEEL LOAD PLATE SHALL BE PAID FOR AS ITEM "BEARING REPLACEMENT WITH ELASTOMERIC BEARING PADS".
9. ELASTOMERIC BEARING PADS SHALL BE INSTALLED AT AN AMBIENT TEMPERATURE BETWEEN 50° F AND 80° F. JACK & RESET IF PLACED OUTSIDE OF THIS RANGE.
10. SEE S-21 FOR STEEL BOLSTER DETAILS AND SUGGESTED BEARING REPLACEMENT PROCEDURE.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

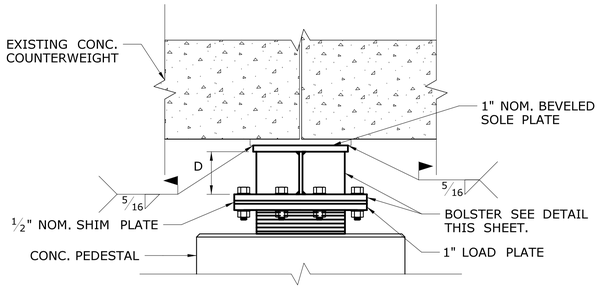
Filename: ...\1765 Elastomerics.dgn

SIGNATURE/ BLOCK:

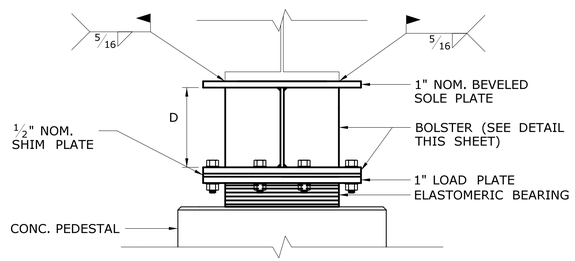
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

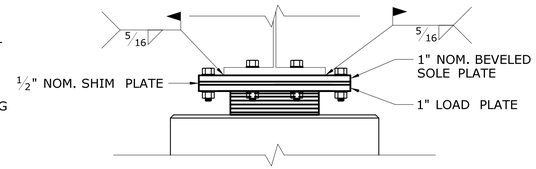
TOWN: HARTFORD
PROJECT NO. 63-700
DRAWING TITLE: EXPANSION BEARING REPLACEMENT - 1
DRAWING NO. S-20
SHEET NO. 02.04.20




**SECTION 1**
SCALE: 1" = 1'-0" **S-20**




**SECTION 2**
SCALE: 1" = 1'-0" **S-20**




**SECTION 3**
SCALE: 1" = 1'-0" **S-20**

## SUGGESTED BEARING REPLACEMENT SEQUENCE

A. INSTALL JACKING STIFFENERS AS REQUIRED TO SUPPORT JACKING LOADS. SEE SHEET S-22 FOR JACKING REQUIREMENT.

B. BRACE ROCKER AGAINST ROTATION PRIOR TO JACKING.

C. INSTALL JACKS AND RAISE SUPERSTRUCTURE UNTIL LOAD IS REMOVED FROM EXISTING STEEL BEARINGS. ALL BEARINGS ALONG A BEARING LINE TO BE JACKED SIMULTANEOUSLY DURING THE LIFTING OPERATION.

D. REMOVE WELDS BETWEEN BOTTOM FLANGE AND BEARING SOLE PLATE.

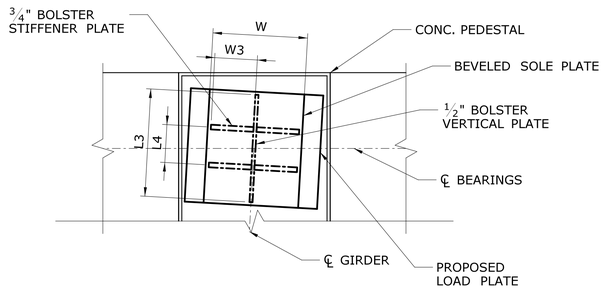
E. REMOVE AND LIFT BEARING ASSEMBLY AND CUT EXISTING ANCHOR BOLTS BELOW THE SURFACE OF PEDESTAL AND GROUT.

F. PROVIDE A CLEAN LEVEL BEARING SURFACE IN ACCORDANCE WITH THE SPECIAL PROVISION "BEARING REPLACEMENT WITH ELASTOMERIC BEARINGS".

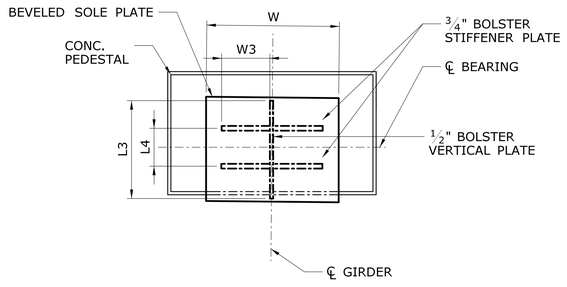
G. PLACE BOLSTER AND ELASTOMERIC PAD ASSEMBLY SO THAT IT IS CENTERED UNDER CENTERLINE OF BEAM AND CENTERLINE OF BEARING STIFFENER (CENTERED ON PAIR IF MULTIPLE). ADD SHIMS AS NECESSARY AND INSTALL BOLTS BETWEEN BOLSTER AND LOAD PLATE.

H. LOWER JACK AND TRANSFER LOAD TO THE NEW BEARING PADS.

I. WELD BEVELED SOLE PLATE TO THE BEAM BOTTOM.




**BOLSTER PLAN PIER EB7 EAST**
SCALE: 1" = 1'-0"



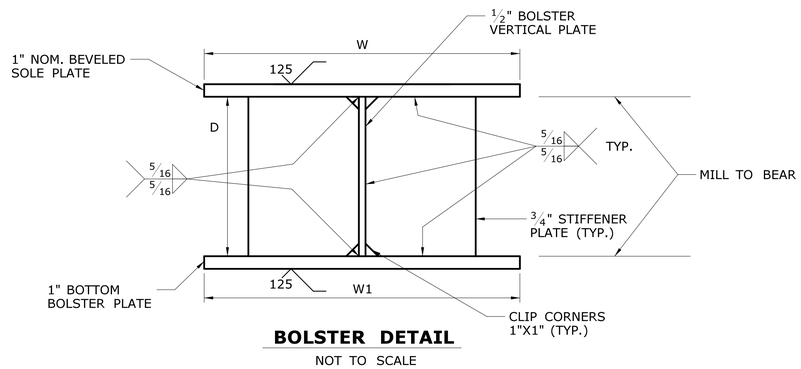

**BOLSTER PLAN TYPICAL**
SCALE: 1" = 1'-0"

## NOTES:

1. STEEL BOLSTERS, INCLUDING BEVELED SOLE PLATE, SHALL BE PAID FOR AS ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 2)".
2. STEEL BOLSTERS, BOLSTER PLATES, SOLE PLATE, AND LOAD PLATES SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. EXISTING BEARINGS HAVE LEAD BASED PAINT ADJACENT TO WELDS INTENDED FOR REMOVAL.
4. FURNISH EXTERNAL LOAD PLATES SHOP VULCANIZED TO ELASTOMERIC BEARING PADS. LOAD PLATES INCLUDED FOR PAYMENT UNDER THE ITEM "BEARING REPLACEMENT WITH ELASTOMERIC BEARING PADS".
5. REMOVAL OF PAINT IN VICINITY OF EXISTING BOTTOM FLANGE FOR THE REMOVAL OF EXISTING BEARING ASSEMBLY AND SOLE PLATE SHALL BE PAID UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 2)." SEE SPECIAL PROVISIONS.
6. MACHINING OF SOLE PLATE AND BOLSTER PLATE SURFACES SHALL BE PERFORMED AFTER GALVANIZING. MACHINED SURFACE SHALL RECEIVE A PRIME COAT AFTER MACHINING.

| PROPOSED BOLSTERS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| LOCATION | GIRDER NO | BEVELED 1" SOLE PLATE | | BOTTOM BOLSTER PLATES | | BOLSTER VERTICAL WEB PLATE | | BOLSTER VERTICAL STIFFENERS* | | |
| | | L (IN) | W (IN) | L1 (IN) | W1 (IN) | L3 (IN) | D (IN) | W3 (IN) | D (IN) | L4 (IN) |
| PIER EB2 | G1 - G9 | 19 | 25 | 19 | 25 | 18 | 10 7/8" | 8 3/4 | 10 7/8" | 6 |
| PIER EB4 WEST | G1 - G9 | 18 | 21 | 18 | 21 | 17 | 5 7/8" | 8 3/4 | 5 7/8" | 6 |
| PIER EB4 EAST | G1 - G9 | 16 | 21 | 18 | 21 | 15 | 5 7/8" | 7 3/4 | 5 7/8" | 6 |
| PIER EB7 WEST | G1 - G9 | 18 | 21 | 18 | 24 | 17 | 5 7/8" | 7 3/4 | 5 7/8" | 6 |
| PIER EB7 EAST | G1 - G9 | 18 | 15 | 18 | 21 | 17 | 6 1/2" | 6 3/4 | 6 1/2" | 6 |
| ABUTMENT 2-N | G1 - G9 | 16 | 24 | 18 | 24 | N/A | | | | |

* 4 VERTICAL STIFFENER PLATES SHALL BE USED PER BOLSTER ASSEMBLY




**BOLSTER DETAIL**
NOT TO SCALE

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: **MSF**
CHECKED BY: **BSH**
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Bolsters.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**
DRAWING TITLE: **EXPANSION BEARING REPLACEMENT - 2**

PROJECT NO. **63-700**
DRAWING NO. **S-21**
SHEET NO. **02.04.21**

| JACKING LOADS - UNFACTORED* | | | | | | |
|---|---|---|---|---|---|---|
| | | JACKING DESIGN LOADS | | | LATERAL LOADS | |
| LOCATION | | DC (KIP) | DW (KIP) | LL + I (KIP) | TRANSVERSE (KIP) | LONGITUDINAL (KIP) |
| PIER EB2 WEST | INT | 94 | 14 | 77 | 1.8 | 3.3 |
| | EXT | 86 | 14 | 48 | 1.8 | 3.3 |
| PIER EB2 EAST | INT | 94 | 14 | 77 | 1.8 | 3.3 |
| | EXT | 86 | 14 | 48 | 1.8 | 3.3 |
| PIER EB4 WEST | INT | 63 | 9 | 102 | 3.6 | 6.6 |
| | EXT | 58 | 9 | 64 | 3.6 | 6.6 |
| PIER EB4 EAST | INT | 66 | 10 | 100 | 3.7 | 6.6 |
| | EXT | 61 | 10 | 63 | 3.7 | 6.6 |
| PIER EB7 WEST | INT | 79 | 12 | 96 | 4.3 | 6.8 |
| | EXT | 87 | 12 | 79 | 4.3 | 6.8 |
| PIER EB7 EAST | INT | 41 | 6 | 86 | 3.2 | 6.4 |
| | EXT | 38 | 6 | 71 | 3.2 | 6.4 |
| ABUTMENT 2-N | INT | 60 | 8 | 95 | 3.8 | 6.6 |
| | EXT | 60 | 8 | 81 | 3.8 | 6.6 |

* UNFACTORED JACKING LOADS SHOWN ABOVE ARE TAKEN AT THE EXISTING BEARING LOCATION FOR EACH BEAM. JACKING LOADS SHALL NOT EXCEED 50% OF THE LOAD CAPACITY OF THE JACKS.

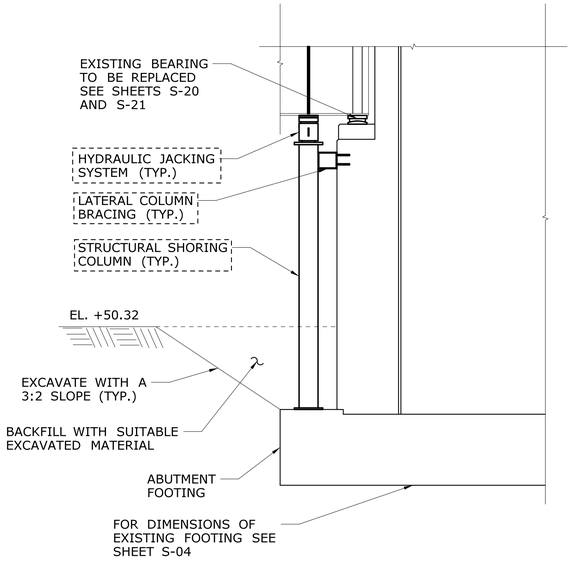
| TEMPORARY SPREADER BEAM DESIGN MOMENTS/REACTIONS - UNFACTORED | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MAX. POSITIVE MOMENTS | | | MAX. NEGATIVE MOMENTS | | | NORTH REACTIONS | | | SOUTH REACTIONS | | |
| LOCATION | GIRDERS | DC (KIP*FT) | DW (KIP*FT) | LL + I (KIP*FT) | DC (KIP*FT) | DW (KIP*FT) | LL + I (KIP*FT) | DC (KIP) | DW (KIP) | LL + I (KIP) | DC (KIP) | DW (KIP) | LL + I (KIP) |
| PIER EB2 WEST | G1 - G3 | 61 | 3 | 104 | -323 | -27 | -175 | -- | -- | -- | -- | -- | -- |
| | G7 - G9 | 129 | 10 | 108 | -141 | -11 | -121 | -- | -- | -- | -- | -- | -- |
| PIER EB2 EAST | G1 - G3 | 61 | 3 | 104 | -323 | -27 | -175 | -- | -- | -- | -- | -- | -- |
| | G7 - G9 | 129 | 10 | 108 | -141 | -11 | -121 | -- | -- | -- | -- | -- | -- |
| PIER EB4 WEST | G1 - G5 | 156 | 23 | 239 | -432 | -66 | -530 | -- | -- | -- | -- | -- | -- |
| | G6 - G9 | 139 | 20 | 218 | -145 | -23 | -225 | -- | -- | -- | -- | -- | -- |
| PIER EB4 EAST | G1 - G4 | 156 | 24 | 227 | -345 | -57 | -356 | -- | -- | -- | -- | -- | -- |
| | G5 - G9 | 131 | 20 | 192 | -153 | -25 | -185 | -- | -- | -- | -- | -- | -- |
| PIER EB7 WEST | G1 - G9 | 4253 | 646 | 3951 | -- | -- | -- | 363 | 54 | 173 | 364 | 54 | 257 |
| PIER EB7 EAST | G1 - G9 | 2208 | 323 | 3951 | -- | -- | -- | 182 | 27 | 173 | 182 | 27 | 257 |

## NOTICE TO CONTRACTOR:

PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL THE SUBSTRUCTURES AND UTILITIES WITHIN THE WORKING AREA. PLACE AND LIMIT CONSTRUCTION EQUIPMENT, CONSTRUCTION LOADS AND OR SURCHARGES IN THE VICINITY OF THE IDENTIFIED SUBSTRUCTURES AND UTILITIES SUCH THAT THE SUBSTRUCTURES AND UTILITIES ARE NOT DAMAGED DUE TO THE CONSTRUCTION ACTIVITIES. MONITOR AND CONTROL VIBRATIONS AND POTENTIAL MOVEMENTS CAUSED BY ANY CONSTRUCTION ACTIVITIES TO AVOID DAMAGES TO THE ADJACENT SUBSTRUCTURES AND UTILITIES. DAMAGES TO ANY SUBSTRUCTURES AND UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CLIENT.

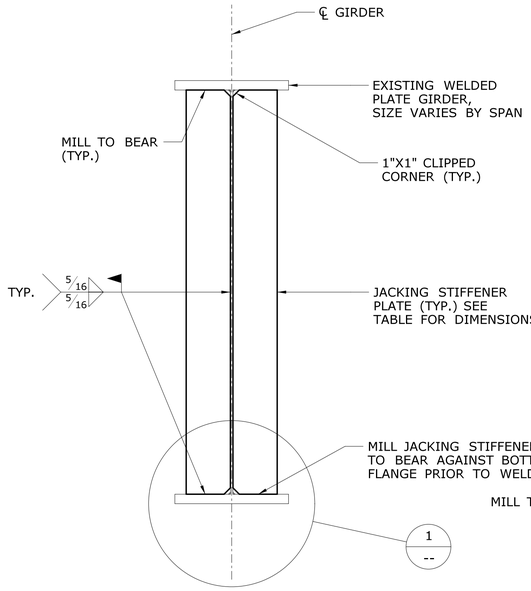
## NOTES:

1. THE PLANS DEPICT A CONCEPTUAL METHOD TO JACK THE BEAMS FOR REPLACING ALL EXPANSION BEARINGS. THE CONTRACTOR MAY SUBMIT ALTERNATE METHODS AND PROCEDURES TO THE ENGINEER FOR REVIEW AND APPROVAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ALL TEMPORARY SUPPORT ELEMENTS AND ANY TEMPORARY STRUCTURES REQUIRED TO ACCESS AND PERFORM THE WORK. ALL WORK ASSOCIATED WITH SUPPORT STRUCTURES SHALL BE PAID FOR AS "TEMPORARY SUPPORT ASSEMBLY".THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND COMPUTATIONS PREPARED, SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF CONNECTICUT, TO THE ENGINEER FOR REVIEW AND APPROVAL.
3. THE WORK TO DESIGN THE TEMPORARY JACKING SYSTEM, DEVELOP THE JACKING CONSTRUCTION PROCEDURE, FURNISH AND INSTALL THE NECESSARY HYDRAULIC LIFTING COMPONENTS AND PERFORM THE HYDRAULIC LIFTING OPERATION SHALL BE PAID FOR UNDER THE ITEM "JACKING FOR BEARING REPLACEMENT". SEE SPECIAL PROVISIONS.
4. THE DESIGN OF SUPPLEMENTAL STRUCTURAL ELEMENTS TO STRENGTHEN EIXSTING MEMBERS PRIOR TO HYDRAULIC LIFTING IS INCIDENTAL TO THE ITEM "JACKING FOR BEARING REPLACEMENT".
5. THE DESIGN, FURNISHING, INSTALLATION AND REMOVAL OF OSHA COMPLIANT WORK PLATFORM AND RAILING SHALL BE PAID FOR AS "JACKING FOR BEARING REPLACEMENT".
6. JACKING OPERATIONS SHALL BE PERFORMED UNDER LIVE TRAFFIC. THE CONTRACTOR SHALL DESIGN THE JACKING SUPPORT STRUCTURE FOR THE SPECIFIED BEAM END REACTIONS TABULATED ON THIS SHEET. THE CONTRACTOR MUST ENSURE THAT TRAVEL LANES ARE OPEN TO TRAFFIC IN ACCORDANCE WITH THE SPECIAL PROVISIONS "PROSECUTION AND PROGRESS".
7. BEARINGS SHALL BE REMOVED AND REPLACED ONE FOR ONE ON A SINGLE SUBSTRUCTURE UNIT AT A TIME. ALL BEAMS ALONG A SINGLE SUBSTRUCTURE UNIT SHALL BE JACKED SIMULTANEOUSLY DURING THE LIFTING OPERATIONS.
8. VERTICAL JACKING DIFFERENTIAL BETWEEN ADJACENT SPANS SHALL BE LIMITED TO $\frac{1}{2}$" FOR PIERS EB4 AND 7. AT PIER EB2 A SYNCHRONIZED LIFTING SYSTEM SHALL BE UTILIZED TO ENSURE EQUAL LOAD SHARING EAST AND WEST OF THE BEARING.
9. WHERE EXISTING DOWNSPOUTS AND LEADERS INTERFERE WITH THE JACKING OR SUPPORT ELEMENTS THEY SHALL BE REMOVED AND REPLACED. PAY FOR UNDER THE ITEMS "REMOVE EXISTING BRIDGE DRAINAGE SYSTEM" AND "8" PIPE FOR BRIDGE DRAINAGE". (FIBERGLASS)
10. WHERE EXISTING HABITATION EXISTS ON STATE PROPERTY, IT SHALL BE REMOVED AT THE RESIDENT'S DIRECTION. REMOVAL AND DISPOSAL SHALL BE INCLUDED FOR PAYMENT UNDER THE ITEM "CLEARING AND GRUBBING".
11. THE USE OF A TEMPORARY SPREAD FOOTING IS PERMITTED AS AN ALTERNATE MEANS OF SUPPORT FOUNDATION. SEE NOTES ON SHEET S-23 FOR REQUIREMENTS. THE DESIGN AND INSTALLATION OF SPREAD FOOTING SHALL BE INCLUDED FOR PAYMENT UNDER ITEM "TEMPORARY SUPPORT ASSEMBLY".
12. SEE SHEET S-21 FOR SUGGESTED EXPANSION BEARING REPLACEMENT PROCEDURE.
13. WORK THE LOAD TABLES ON THIS SHEET WITH THE SUGGESTED TEMPORARY SUPPORT ASSEMBLIES SHOWN ON SHEET S-23.



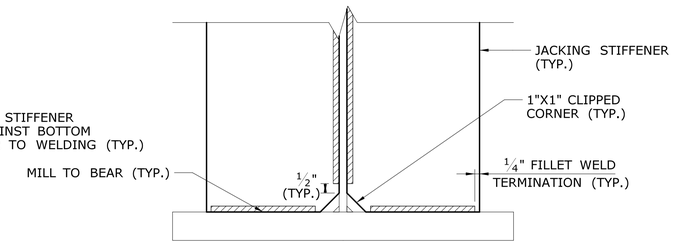

## ABUTMENT 2-N SECTION

SCALE: $\frac{1}{4}$" = 1'-0"




## JACKING STIFFENER DETAIL

SCALE: 1" = 1'-0"




## WELD TERMINATION DETAIL

NOT TO SCALE

| PROPOSED JACKING STIFFENER DIMENSIONS | | |
|---|---|---|
| PIER | WIDTH (IN.) | THICKNESS (IN.) |
| PIER 2EB | 8 | $1\frac{1}{4}$ |
| PIER 4EB WEST | 8 | $\frac{3}{4}$" |
| PIER 4EB EAST | 7 | $\frac{3}{4}$" |
| PIER 7EB WEST | 7 | $\frac{3}{4}$" |
| PIER 7EB EAST | 7 | $\frac{3}{4}$" |
| ABUT. 2-N | 7 | $\frac{3}{4}$" |

## LEGEND

XXXXXX - DENOTES CONTRACTOR DESIGNED ELEMENTS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

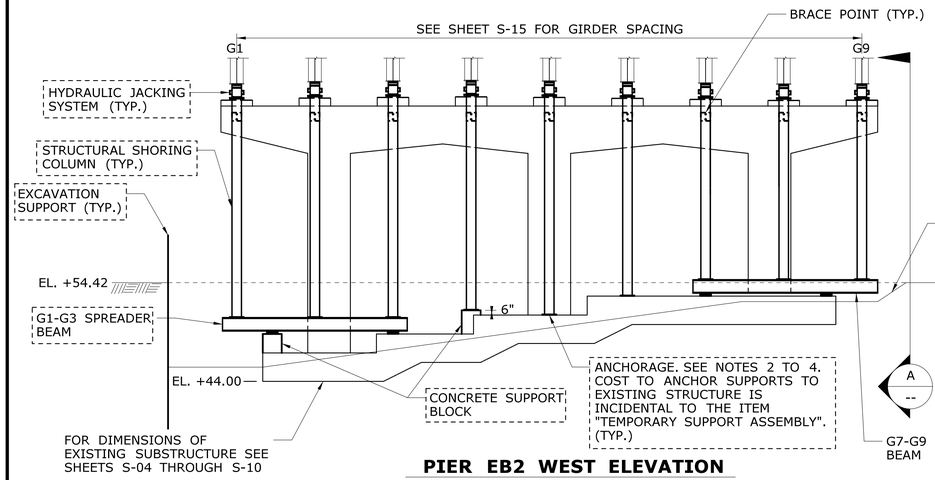
Filename: ...\MSta..Design\1765 Jacking 1.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

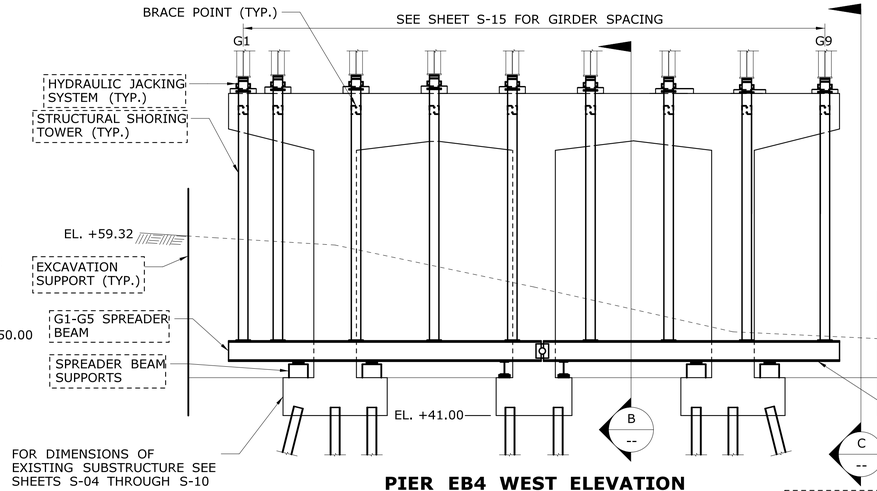
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD
PROJECT NO. 63-700
DRAWING TITLE: TEMPORARY SUPPORT OF STRUCTURE - 1
DRAWING NO. S-22
SHEET NO. 02.04.22



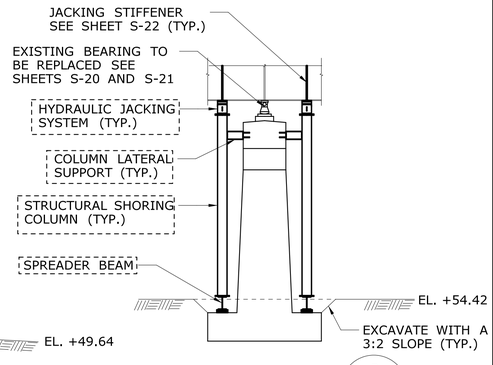

## PIER EB2 WEST ELEVATION

SCALE: 1/8" = 1'-0"




## PIER EB4 WEST ELEVATION

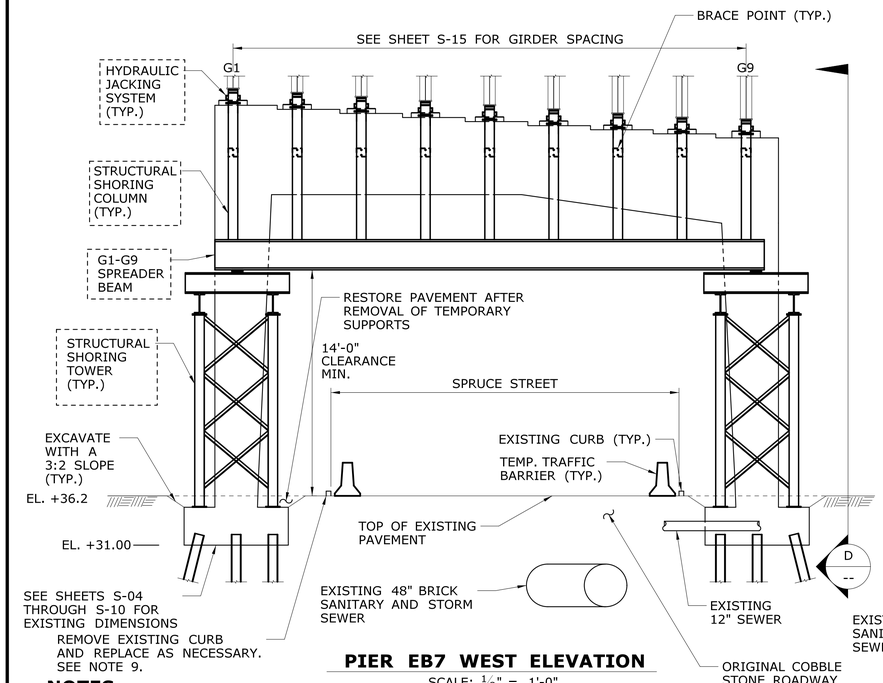
SCALE: 1/8" = 1'-0"




## PIER EB2 SECTION

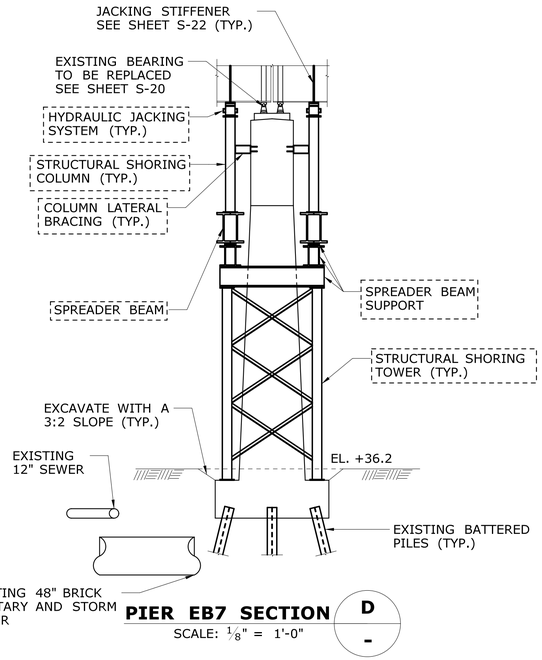
SCALE: 1/8" = 1'-0"

A




## PIER EB7 WEST ELEVATION

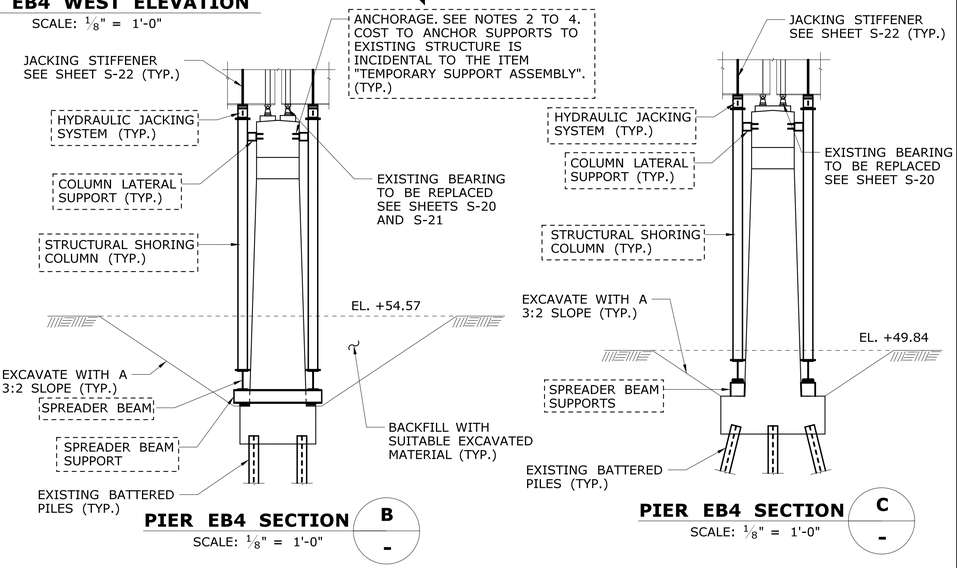
SCALE: 1/8" = 1'-0"




## PIER EB7 SECTION

SCALE: 1/8" = 1'-0"

D




## PIER EB4 SECTION

SCALE: 1/8" = 1'-0"

B

## PIER EB4 SECTION

SCALE: 1/8" = 1'-0"

C

## NOTES

1. CONTRACTOR SHALL BACKFILL ANY EXCAVATION. COST IS INCIDENTAL WITH THE ITEM "TEMPORARY SUPPORT ASSEMBLY". COST OF EXCAVATION AND SUPPORT OF EXCAVATION ARE INCIDENTAL TO "TEMPORARY SUPPORT ASSEMBLY".
2. ANCHOR SUPPORT COLUMNS TO EXISTING FOOTING WITH DRILLED AND GROUTED BARS. HOLES IN EXISTING FOOTING SHALL BE CORE DRILLED.
3. CONTRACTOR SHALL MEET THE MANUFACTURER'S INSTALLATION, SPACING, AND EDGE DISTANCE REQUIREMENTS FOR ANY DRILLED AND GROUTED BAR. REMOVE ALL ELEMENTS UPON COMPLETION OF THE WORK, PRIOR TO BACKFILLING.
4. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGING EXISTING REINFORCEMENT. CONTRACTOR SHALL USE A PACHOMETER PRIOR TO DRILLING TO VERIFY THAT NO EXISTING REINFORCEMENT IS IN PLACE THAT MAY INTERFERE WITH HOLE PLACEMENT.
5. EXISTING UTILITIES SHOWN ARE REPRESENTATIVE ONLY. THE CONTRACTOR SHOULD BE AWARE THAT THERE ARE EXISTING UTILITIES IN THE VACINITY OF PROPOSED JACKING LOCATIONS. SURCHARGE ON PIERS DURING CONSTRUCTION SHALL BE APPROVED BY UTILITY OWNER. SEE GENERAL NOTES ON SHEET S-03 FOR EXISTING UTILITY NOTES.
6. SEE SHEET S-22 FOR JACKING ASSEMBLY AND LIFTING OPERATION NOTES AND LOAD TABLES.
7. SEE SHEET S-21 FOR SUGGESTED BEARING REPLACMENT PROCEDURE.
8. SEE SHEET S-13 AND S-14 FOR KEEPER BLOCKS.
9. REMOVAL AND REPLACEMENT OF CURB SHALL BE PAID FOR AS "RESET CONCRETE CURBING".

## ALTERNATE SPREAD FOOTING NOTES

A. THE DEPARTMENT DOES NOT GUARANTEE THE DETAILS PERTAINING TO BORINGS, AS SHOWN ON ANY DOCUMENTS SUPPLIED BY THE DEPARTMENT, TO BE MORE THAN A GENERAL INDICATION OF THE MATERIALS LIKELY TO BE FOUND ADJACENT TO HOLES BORED AT THE SITE OF THE WORK, APPROXIMATELY AT THE LOCATIONS INDICATED. CONTRACTOR SHALL EXAMINE BORING DATA, WHERE AVAILABLE, AND MAKE THEIR OWN INTERPRETATION OF THE SUBSOIL INVESTIGATIONS AND OTHER PRELIMINARY DATA AND SHALL BASE HIS BID ON HIS OWN OPINION OF THE CONDITIONS LIKELY TO BE ENCOUNTERED.

B. TEMPORARY FOOTINGS ARE ANTICIPATED TO SETTLE ON LOADING. THE CONTRACTOR SHALL TAKE BORINGS AT ALL LOCATIONS WHERE A SPREAD FOOTING IS TO BE USED AND SUBMIT SETTLEMENT VALUES. ALL DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE COST OF BORING AND LABORATORY SOIL TEST IS INCIDENTAL TO THE ITEM "TEMPORARY JACKING ASSEMBLY".

C. TEMPORARY FOOTINGS SHALL BE CONTINUOUSLY MONITORED FOR SETTLEMENT AND OBSERVED SETTLEMENT MUST BE COMPENSATED BY JACK ADJUSTMENTS.

D. PRIOR TO THE PLACEMENT OF THE TEMPORARY FOOTING, OVER EXCAVATE COHESIVE SOIL, IF ANY, WITHIN THE UPPER FIVE FEET FROM THE PROPOSED BOTTOM OF THE TEMPORARY FOOTING ELEVATION AND REPLACEMENT WITH ENGINEERED FILL AS PER CONNDOT REQUIREMENTS.

E. THE GROUND WHERE THE TEMPORARY FOOTING IS SEATED SHALL BE LEVEL.

F. TIMBER MATS SHALL BE BOLTED TOGETHER.

G. SEE SUBSET 02.06 FOR SOIL BORING REFERENCE DATA.

## LEGEND

XXXXXX - DENOTES CONTRACTOR DESIGNED ELEMENTS

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF

CHECKED BY: BSH

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\MSta..Design\1765 Jacking 1.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty &Hanover

PROJECT TITLE:

# REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

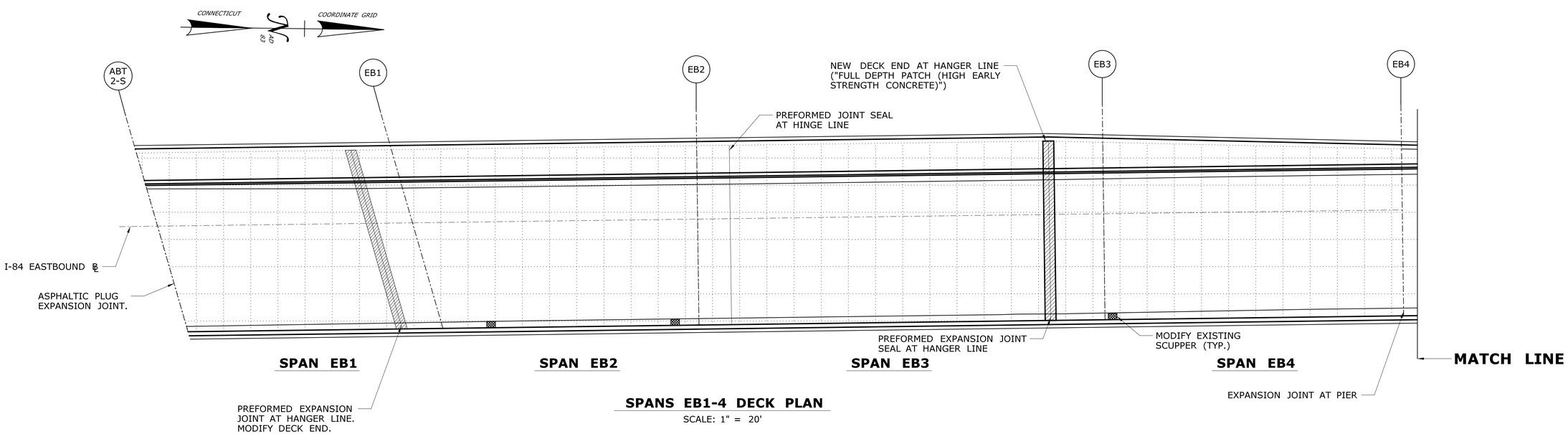
TOWN: HARTFORD

PROJECT NO. 63-700

DRAWING TITLE: TEMPORARY SUPPORT OF STRUCTURE - 2

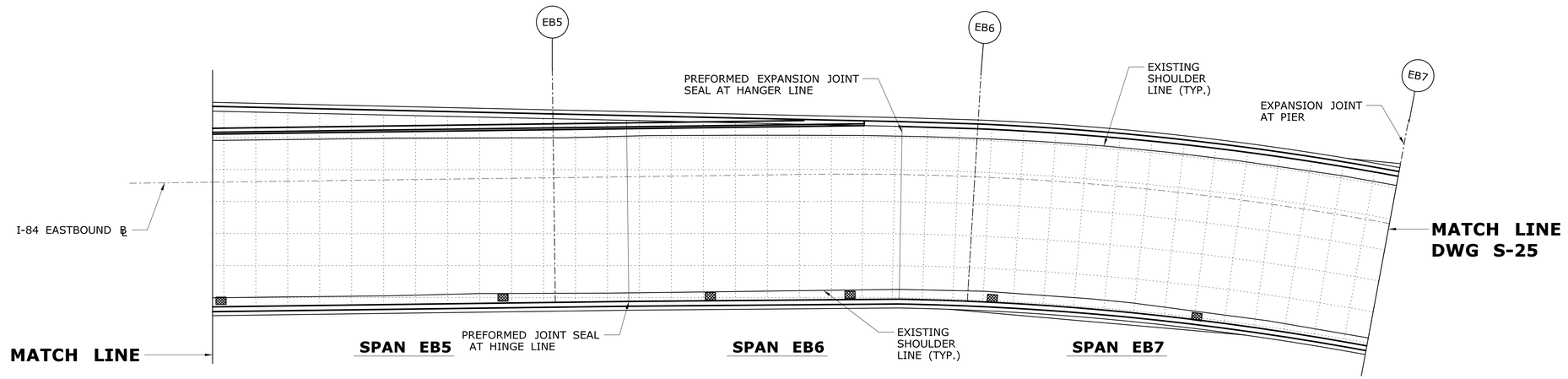
DRAWING NO. S-23

SHEET NO. 02.04.23




## SPANS EB1-4 DECK PLAN

SCALE: 1" = 20'




## SPANS EB5-7 DECK PLAN

SCALE: 1" = 20'

| SPAN* | ANTICIPATED TOTAL PATCH AREA (SF)** | AS-BUILT TOTAL PATCH AREA (SF) |
|---|---|---|
| EB1 | 1150 | |
| EB2 | 1890 | |
| EB3 | 1700 | |
| EB4 | 1800 | |
| EB5 | 1820 | |
| EB6 | 1080 | |
| EB7 | 2050 | |

* "SPAN" IS MEASURED FROM JOINT TO JOINT
** SEE NOTE 3

**LEGEND:**

MODIFY SCUPPER EXTENSION SEE SHEET S-36

**NOTES:**

1. GRID LINES SHOWN ARE APPROXIMATELY 10' x 10'
2. FOR RESIDENT USE TRACKING AS-BUILT PATCH LIMITS.
3. SEE SHEET S-28 FOR DECK PATCHING DETAILS AND REQUIREMENTS.
4. SEE SHEET S-25 FOR SPANS EB8-10.
5. SEE SHEETS S-26 AND S-27 FOR DECK UNDERSIDE PATCHING PLAN.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Deck Patching Plans.dgn

SIGNATURE/ BLOCK:

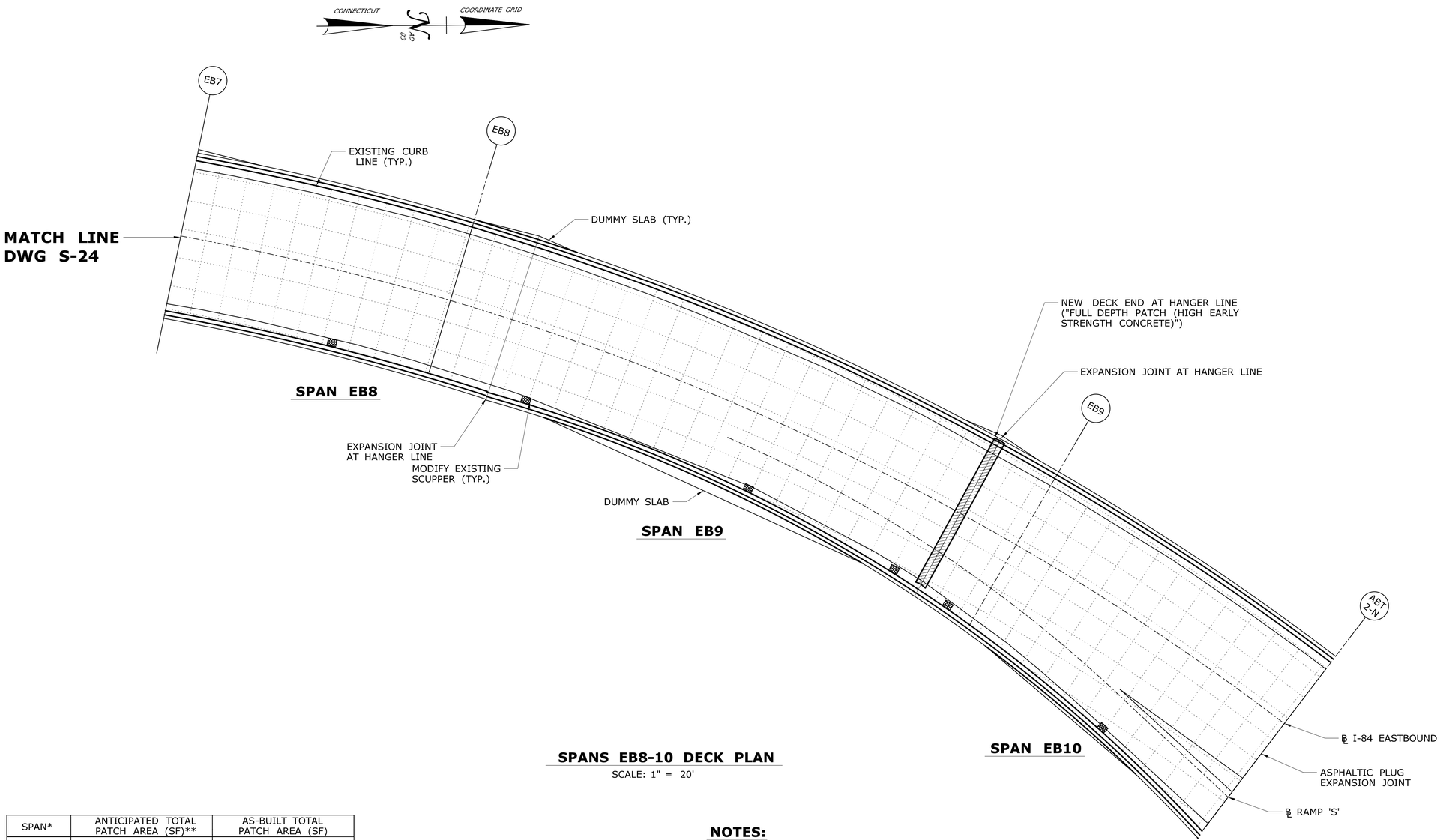
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

DRAWING TITLE: **DECK PATCHING PLAN - 1**

PROJECT NO. **63-700**
DRAWING NO. **S-24**
SHEET NO. **02.04.24**




## SPANS EB8-10 DECK PLAN

SCALE: 1" = 20'

| SPAN* | ANTICIPATED TOTAL PATCH AREA (SF)** | AS-BUILT TOTAL PATCH AREA (SF) |
|---|---|---|
| EB8 | 1470 | |
| EB9 | 2120 | |
| EB10 | 2010 | |

* "SPAN" IS MEASURED FROM JOINT TO JOINT

** SEE NOTE 3

## NOTES:

1. GRID LINES SHOWN ARE APPROXIMATELY 10' x 10'
2. FOR RESIDENT USE TRACKING AS-BUILT PATCH LIMITS.
3. SEE SHEET S-28 FOR DECK PATCHING DETAILS AND REQUIREMENTS.
4. SEE SHEET S-24 FOR SPANS EB1-7.
5. SEE SHEETS S-26 AND S-27 FOR DECK UNDERSIDE PATCHING PLAN.

## LEGEND:

MODIFY SCUPPER EXTENSION SEE SHEET S-36

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF

CHECKED BY: BSH

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ..\1765 Deck Patching Plans.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:

**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

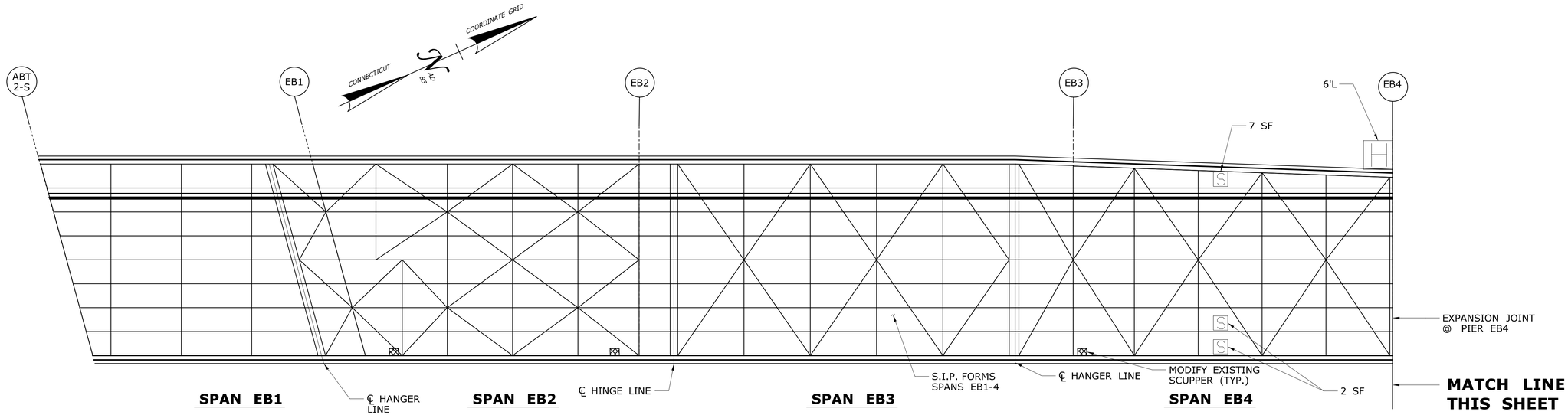
TOWN: **HARTFORD**

DRAWING TITLE: **DECK PATCHING PLAN - 2**

PROJECT NO. **63-700**

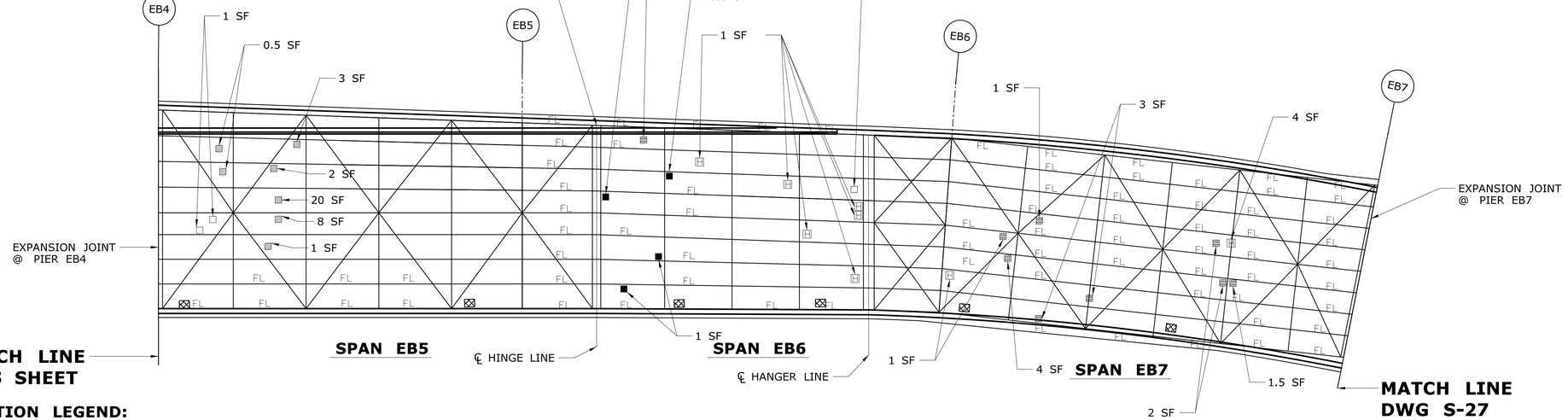
DRAWING NO. **S-25**

SHEET NO. **02.04.25**




## SPANS EB1-4 UNDERSIDE DECK PLAN

SCALE: 1" = 20'




## SPANS EB5-7 UNDERSIDE DECK PLAN

SCALE: 1" = 20'

## CONCRETE DETERIORATION LEGEND:

| | |
|---|---|
| | HOLLOW HAUNCH |
| | SPALL |
| | SPALL WITH EXPOSED REINFORCEMENT |
| S.F. | SQUARE FEET |
| S | S.I.P FORM RUSTED THROUGH |
| H | HOLLOW AREA |
| FL | HOLLOW HAUNCH FOR FULL DIAPHRAGM BAY LENGTH |

## LEGEND:

MODIFY SCUPPER EXTENSION SEE SHEET S-36

## NOTES:

1. THE DETERIORATION SHOWN IS BASED ON INSPECTION INFORMATION. THE CONTRACTOR AND RESIDENT ENGINEER ARE RESPONSIBLE FOR FINAL LIMITS.
2. WORK THIS SHEET WITH UNDERSIDE PATCHING SHEET S-27 AND ESTIMATED QUANTITIES SHOWN ON SHEETS S-24 AND S-25.
3. SEE S-28 FOR DECK PATCHING DETAILS.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Underside Deck Patching Plans (2).dgn

SIGNATURE/ BLOCK:

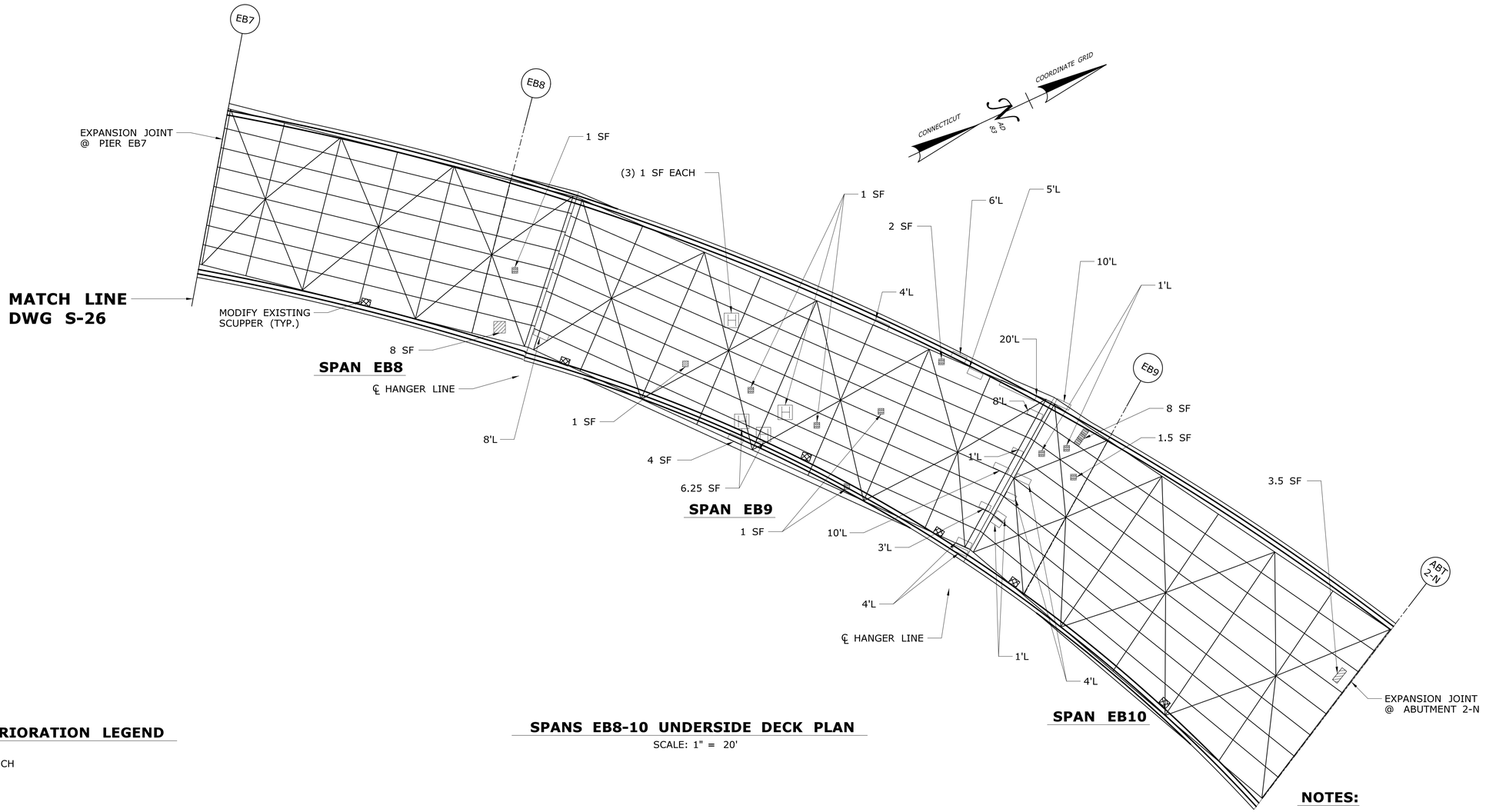
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

DRAWING TITLE:
**DECK UNDERSIDE PATCHING PLAN - 1**

PROJECT NO. **63-700**
DRAWING NO. **S-26**
SHEET NO. **02.04.26**




## SPANS EB8-10 UNDERSIDE DECK PLAN

SCALE: 1" = 20'

## CONCRETE DETERIORATION LEGEND

| | |
|---|---|
| ☐ | HOLLOW HAUNCH |
| ▨ | SPALL |
| ▨ | SPALL WITH EXPOSED REINFORCEMENT |
| S.F. | SQUARE FEET |
| S | S.I.P FORM RUSTED THROUGH |
| H | HOLLOW AREA |
| FL | HOLLOW HAUNCH FOR FULL DIAPHRAGM BAY LENGTH |

## LEGEND:

▨ MODIFY SCUPPER EXTENSION SEE SHEET S-36

## NOTES:

1. DETERIORATION SHOWN IS BASED ON INSPECTION INFORMATION. THE CONTRACTOR AND RESIDENT ENGINEER ARE RESPONSIBLE FOR FINAL LIMITS.
2. WORK THIS SHEET WITH UNDERSIDE PATCHING SHEET S-26 AND ESTIMATED QUANTITIES SHOWN ON SHEETS S-24 AND S-25.
3. SEE S-28 FOR DECK PATCHING DETAILS.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Underside Deck Patching Plans (2).dgn

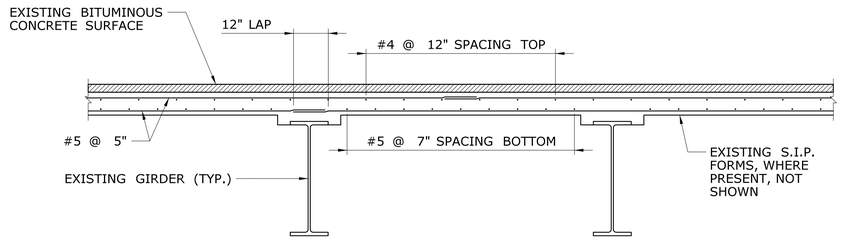
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

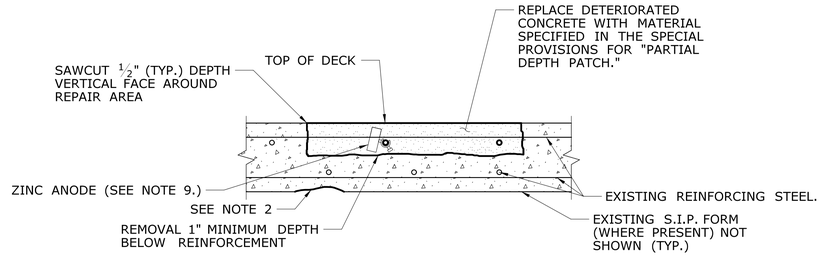
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD
DRAWING TITLE: DECK UNDERSIDE PATCHING PLAN - 2

PROJECT NO. 63-700
DRAWING NO. S-27
SHEET NO. 02.04.27



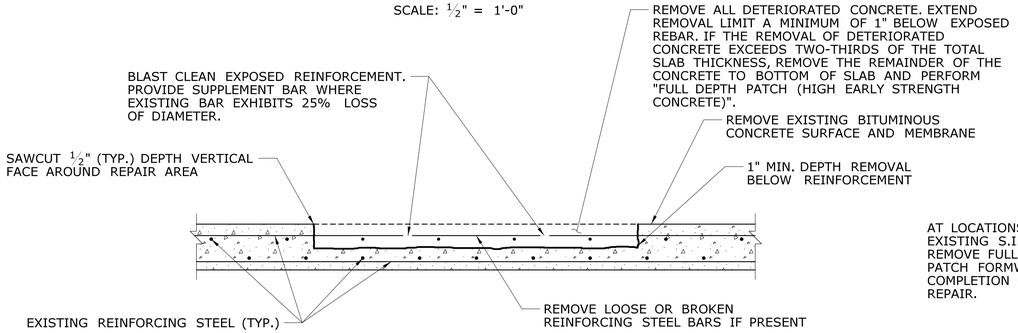

## EXISTING DECK REINFORCEMENT




## PARTIAL DEPTH PATCH

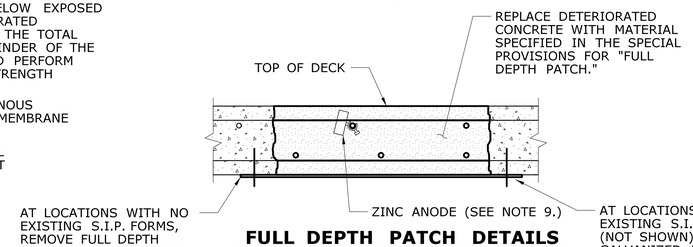
SCALE: 1½" = 1'-0"

SCALE: ½" = 1'-0"



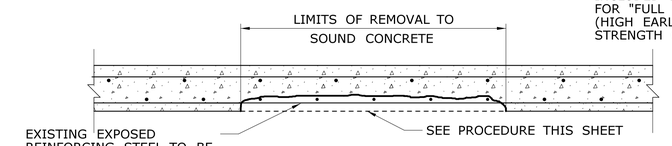

## CONCRETE REMOVAL AREA

SCALE: 1" = 1'-0"



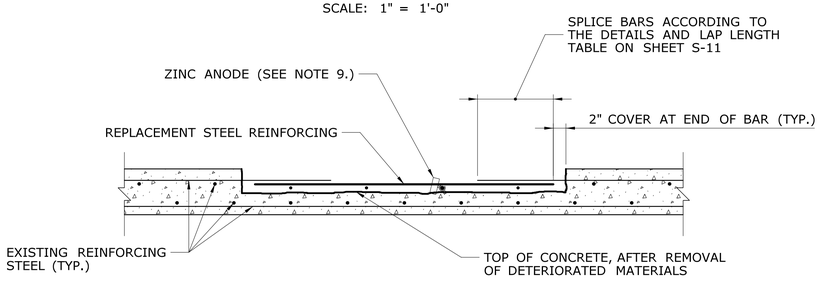

## FULL DEPTH PATCH DETAILS

SCALE: 1½" = 1'-0"



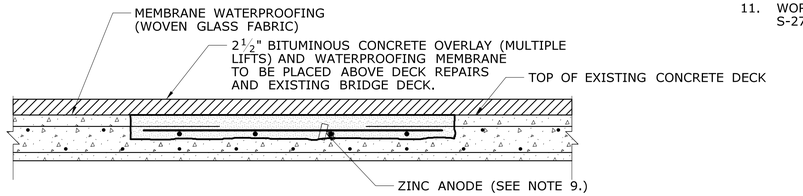

## DECK UNDERSIDE REPAIR DETAIL

SCALE: 1" = 1'-0"



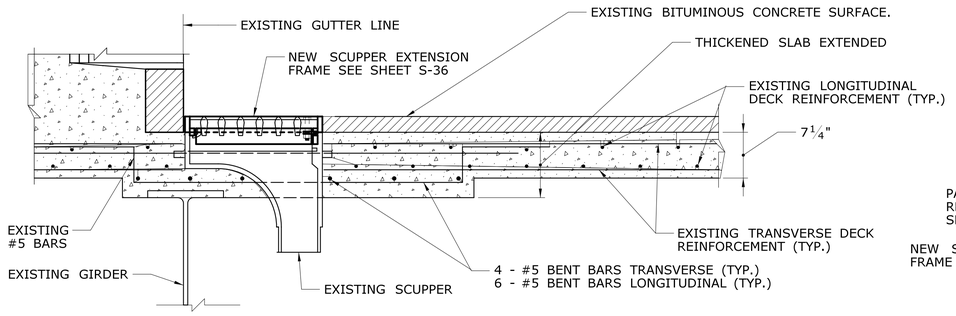

## DAMAGED REINFORCEMENT REPAIR

SCALE: 1" = 1'-0"



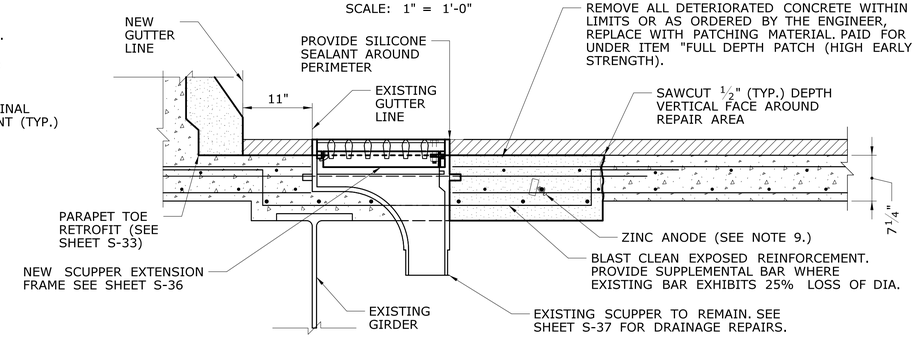

## OVERLAY OVER REPAIRS

SCALE: 1" = 1'-0"




## EXISTING CONDITION AT SCUPPERS

SCALE: 1" = 1'-0"




## FULL DEPTH REPAIR AT SCUPPERS

SCALE: 1" = 1'-0"

## CONCRETE PATCHING NOTES

1. IF, AFTER CONCRETE REMOVAL, THE REINFORCING STEEL HAS AT LEAST ONE HALF OF ITS SURFACE AREA EXPOSED, THE CONCRETE SHALL BE FURTHER REMOVED TO A DEPTH OF 1" BELOW THE STEEL. IN AREAS WHERE REINFORCING STEEL IS ONLY PARTIALLY EXPOSED AFTER REMOVAL OF DETERIORATED CONCRETE, THE REINFORCEMENT SHALL BE COATED WTIH EPOXY BONDING COMPOUND (SEE SPECIAL PROVISIONS) BEFORE PLACING "PARTIAL DEPTH PATCH" MATERIAL.
2. SPALLED, DELAMINATED OR OTHERWISE DETERIORATED CONCRETE FROM THE UNDERSIDE OF DECK SHALL BE REMOVED. EXPOSED REINFORCING STEEL AND CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY WITHIN SPALLS. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "CLEAN AND COAT EXISTING REINFORCING STEEL."
3. ADDITIONAL CONCRETE REMOVAL REQUIRED FOR THE REPAIR OF THE REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM "PARTIAL DEPTH PATCH".
4. IF REMOVAL OF DETERIORATED CONCRETE FOR "PARTIAL DEPTH PATCH" EXCEEDS TWO-THIRDS OF THE TOTAL THICKNESS OF THE SLAB, REMOVE THE REMAINDER OF THE CONCRETE TO THE BOTTOM OF THE SLAB AND PERFORM "FULL DEPTH PATCH." FINAL PAYMENT SHALL BE MADE AS "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)" ONLY. SEE SPECIAL PROVISIONS.
5. AT LOCATIONS WHERE SPALLS OR DELAMINATED CONCRETE ON THE UNDERSIDE OF THE DECK ARE DEEPER THAN HALF THE SLAB THICKNESS, OR IF THERE ARE LARGE AREAS OF UNCONFINED REBAR AFTER CONCRETE REMOVAL (>10 SF), REMOVE THE BITUMINOUS OVERLAY, MEMBRANE AND SLAB CONCRETE FULL DEPTH AND REPAIR AS A "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)."
6. INSTALL PROTECTIVE SHIELDING UNDER SPANS OVER ROADWAYS, SIDEWALKS, PARKING LOTS AND RAILROAD TRACKS TO PROTECT TRAFFIC FROM POSSIBLE FALLING DEBRIS. THE COST OF WHICH SHALL BE INCLUDED IN THE CONCRETE REPAIR ITEMS. DEBRIS SHIELDS CONSTRUCTED OVER THE RAILROAD SHALL MEET THE REQUIREMENTS OF AMTRAK. SEE SPECIAL PROVISIONS.
7. DECK PATCHING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISIONS "MAINTENANCE AND PROTECTION OF TRAFFFIC" AND "PROSECUTION AND PROGRESS".
8. FINAL PAVING SHALL NOT BE PERFORMED UNTIL DECK REPAIRS HAVE BEEN COMPLETED ON BOTH TOP AND BOTTOM SURFACE.
9. ZINC ANODES SHALL BE INSTALLED IN ALL PARTIAL AND FULL DEPTH DECK PATCHES. ANODES SHALL BE PAID FOR UNDER ITEM "EMBEDDED GALVANIC ANODES". ANODES SHALL BE INSTALLED PER THE REQUIREMENTS OF THE SPECIAL PROVISIONS. IN REPAIRS WITH MULTIPLE MATS OR REINFORCING STEEL, ELECTRICAL CONTINUITY SHALL BE ESTABLISHED BY TYING DISCONTINOUS STEEL TO CONTINUOUS STEEL USING STEEL TIE WIRE. MAXIMUM ANODE SPACING FOR DECK REPAIRS IS 20 INCHES.
10. TEMPORARY PATCHES MAY BE REQUIRED AFTER THE COMPLETION OF BRIDGE DECK MILLING AND PRIOR TO OPENING THE ROADWAY TO TRAFFIC AS DIRECTED BY THE ENGINEER TO ENSURE A CLEAR ROADWAY, SAFE FOR TRAVEL. SEE SPECIAL PROVISIONS ITEM "SURFACE PATCH (TEMPORARY)".
11. WORK THIS SHEET WITH THE PATCHING LIMITS SHOWN ON SHEETS S-24 TO S-27

## DECK UNDERSIDE REPAIR PROCEDURE

A. REMOVE DETERIORATED S.I.P. FORM, IF PRESENT, BY MECHANICAL MEANS.

B. IF CONCRETE THAT WAS PREVIOUSLY COVERED WITH S.I.P. IS DETERIORATED, THEN REMOVE THE CONCRETE TO SOUND CONCRETE.

C. IF THE CONCRETE DECK IS NOT COVERED BY S.I.P FORM, THEN REMOVE DETERIORATED CONCRETE TO SOUND CONCRETE.

D. IF REINFORCING STEEL IS EXPOSED, THEN CLEAN BY MECHANICAL CLEANING METHODS. WHERE ACTIVE CORROSION HAS OCCURED THAT WOULD INHIBIT BONDING, SANDBLAST STEEL TO WHITE METAL FINISH.

E. CLEAN THE SOUND CONCRETE SURFACE AREA OF ALL DIRT, DUST, LOOSE PARTICLES OR OTHER BOND INHIBITING MATTER BY AN APPROVED METHOD.

F. AT LOCATIONS WHERE SPALLS OR DELAMINATED CONCRETE ON THE UNDERSIDE OF DECK ARE DEEPER THAN HALF THE SLAB THICKNESS, REMOVE THE SLAB CONCRETE FULL DEPTH AND REPAIR AS "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)". IF LESS THAN 50% OF THE DIAMETER OF ANY REINFORCING BAR IS EXPOSED OR IF THE BAR HAS LESS THAN 1 FOOT IN LENGTH WITH MORE THAN 50% OF ITS DIAMETER EXPOSED, THE BAR SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM "CLEAN AND COAT EXISTING REINFORCING STEEL".

G. IF ANY BAR IS EXPOSED GREATER THAN THE PARAMETERS STATED IN PROCEDURE NOTE F, OR IF THE BARS EXHIBIT GREATER THAN 25% LOSS OF DIAMETER SECTION, THE AREA SHALL BE REPAIRED IN ACCORDANCE WITH THE PROCEDURE FOR "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)".

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Deck Repairs.dgn

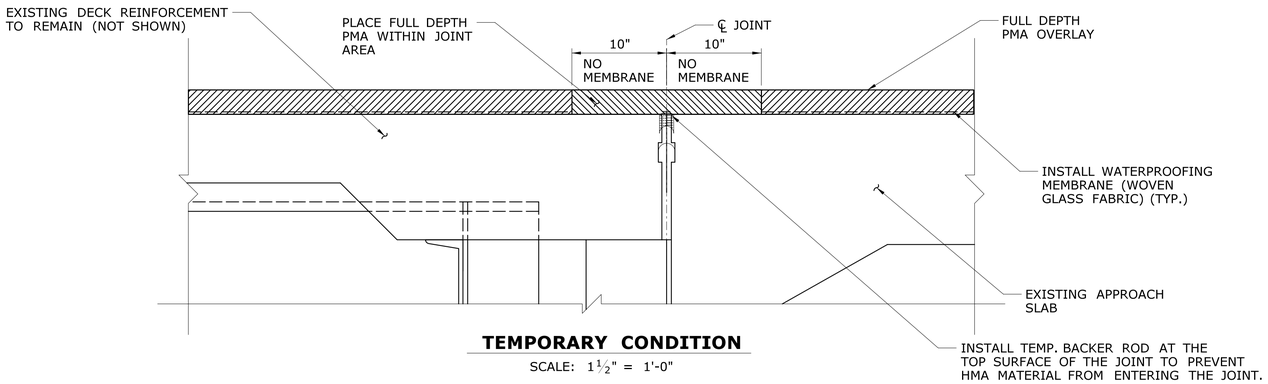
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

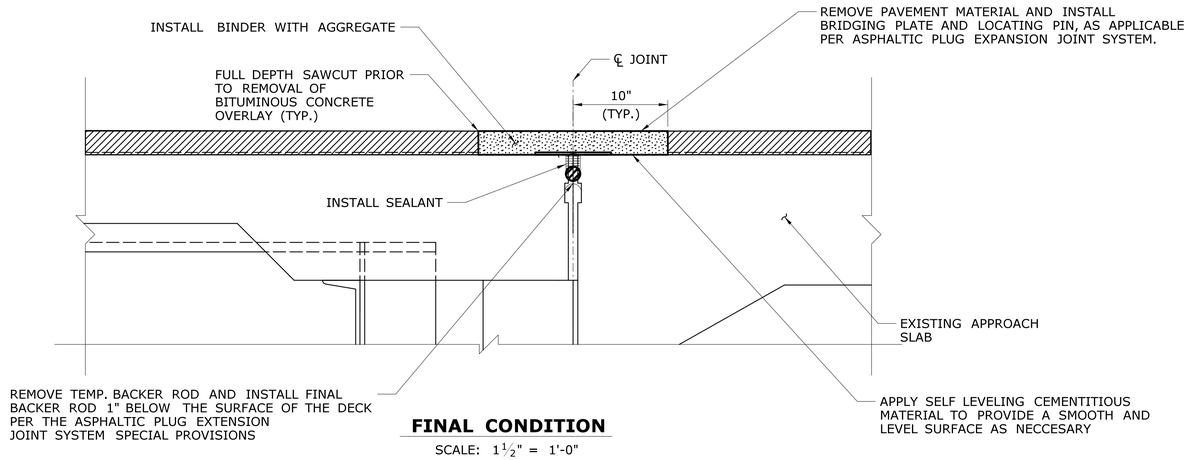
TOWN: HARTFORD
DRAWING TITLE: DECK REPAIR DETAILS

PROJECT NO. 63-700
DRAWING NO. S-28
SHEET NO. 02.04.28




**TEMPORARY CONDITION**

SCALE: $1\frac{1}{2}$" = 1'-0"




**FINAL CONDITION**

SCALE: $1\frac{1}{2}$" = 1'-0"

## ASPHALTIC PLUG EXPANSION JOINT SYSTEM NOTES

1. PROVIDE BRIDGING PLATE AT ABUTMENT JOINTS. THE STEEL PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36. THE STEEL PLATES AND WELDED STUDS SHALL BE HOT DIPPED GALVANIZED IN CONFORMANCE WITH ASTM A123 AFTER FABRICATION.
2. THE REMOVAL OF ALL EXISTING JOINT SYSTEMS AND BITUMINOUS CONCRETE WITHIN THE LIMITS SHOWN SHALL BE PAID FOR UNDER THE ITEM "REMOVAL OF HMA WEARING SURFACE".
3. CRACK SEALANT PLACED ALONG VERTICAL FACES OF THE SAW-CUT PAVEMENT AND ON SURFACE AT JOINTS SHALL BE PAID UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM."
4. SAWCUTTING AND REMOVAL OF PAVEMENT FOR JOINT INSTALLATION SHALL BE PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM".
5. REFER TO SPECIAL PROVISIONS ASPHALTIC PLUG JOINT SYSTEM INSTALLATION RESTRICTIONS.
6. SEALING OF PARAPET JOINTS IS PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM."
7. SEE TABLE THIS SHEET FOR THERMAL MOVEMENT RANGES.
8. THE CLOSED CELL BACKER ROD SHALL BE PLACED A MINIMUM OF 2" FROM THE OUTSIDE FACE OF PARAPETS AND MEDIAN BARRIERS, CLOSED CELL BACKER ROD DIAMETER, SHALL BE DETERMINED AFTER MEASURING THE JOINT OPENING, AND SHALL BE 25% LARGER THAN THE JOINT OPENING.
9. THE NON-SAGGING SILICONE SEALANT SHALL BE REPLACED ON THE BACKER ROD 1/2" THICK. AT THE GUTTER, THE SILICONE SEALANT SHALL BE PLACED FLUSH WITH THE OUTSIDE FACE OF CONCRETE.
10. PRIOR TO INSTALLING THE SILICONE SEALANT, CLEAN JOINT SIDES BY SANDBLASTING. DUST SHALL BE REMOVED BY THE METHOD APPROVED BY THE ENGINEER. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM"
11. SEE GENERAL PLAN SHEET S-02 FOR ASPHALTIC PLUG JOINT LOCATIONS.

## ASPHALTIC PLUG EXPANSION JOINT SYSTEM - SUGGESTED SEQUENCE OF WORK:

STEP 1 REMOVE THE EXISTING PAVEMENT MATERIAL AND THE JOINT MATERIAL.

STEP 2 INSTALL TEMPORARY BACKER ROD FLUSH WITH THE BRIDGE DECK AND APPRAOCH SLAB.

STEP 3 REPAIR DETORIORATED CONCRETE AS NEEDED TO BE PAID UNDER "PARTIAL DEPTH PATCH" OR "FULL DEPTH PATCH" ITEMS.

STEP 4 INSTALL WATERPROOFING MEMBRANE (WOVEN GLASS FABRIC ) TO THE TOP OF THE DECK AND APPROACH SLAB WITHIN THE LIMITS SHOWN.

STEP 5 PLACE PMA S0.25 AND PMA S0.50 (REFER TO BITUMINOUS CONCRETE PLACEMENT REQUIREMENTS NOTES ON S-03.

STEP 6 CUT PAVEMENT FULL DEPTH AT 10" FROM THE CENTER OF THE JOINT (BOTH SIDES OF JOINT) AND REMOVE ALL PAVEMENT MATERIAL BETWEEN SAW-CUTS.

STEP 7 INSTALL FINAL ASPHALTIC PLUG EXPANSION JOINT SYSTEM.

| THERMAL MOVEMENT RANGE* | | | | | |
|---|---|---|---|---|---|
| | JOINT OPENING | | | | |
| | 40° | 50° | 60° | 70° | 80° |
| ABUTMENT 2-N | $1\frac{9}{16}$" | $1\frac{1}{2}$" | $1\frac{7}{16}$" | $1\frac{5}{16}$" | $1\frac{1}{4}$" |
| ABUTMENT 2-S | 1" | 1" | 1" | 1" | 1" |

*JOINT OPENING AT 50° BASED ON ORIGINAL PLANS. CONTRACTOR TO VERIFY EXISTING JOINT OPENING AND MODIFY THERMAL MOVEMENT RANGE TABLE BASED ON FIELD OBSERVATIONS.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Asphaltic Plug Joint.dgn

SIGNATURE/ BLOCK:

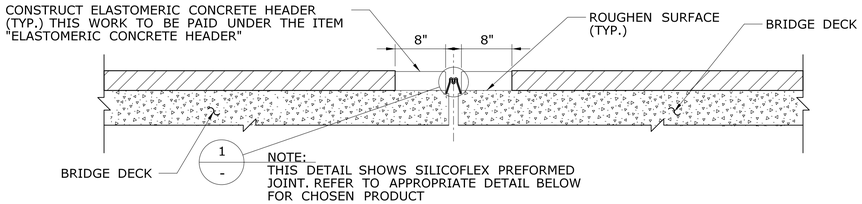
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

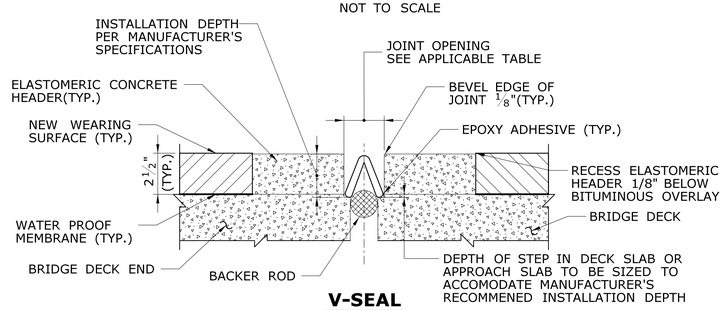
DRAWING TITLE:
**DECK JOINT SEAL DETAILS - 1**

PROJECT NO. **63-700**
DRAWING NO. **S-29**
SHEET NO. **02.04.29**

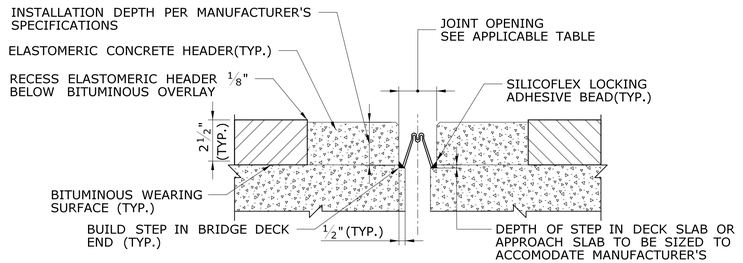



## JOINT TREATMENT AT EXPANSION JOINTS

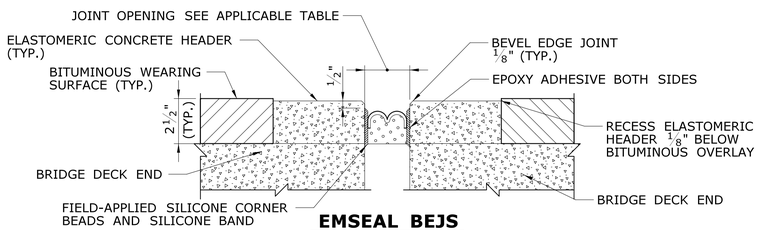
NOT TO SCALE




## V-SEAL



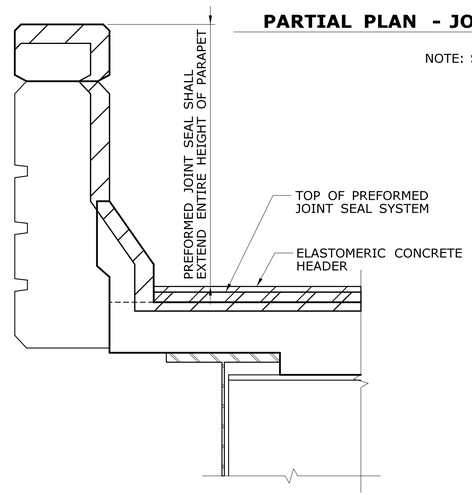

## SILICOFLEX




## EMSEAL BEJS

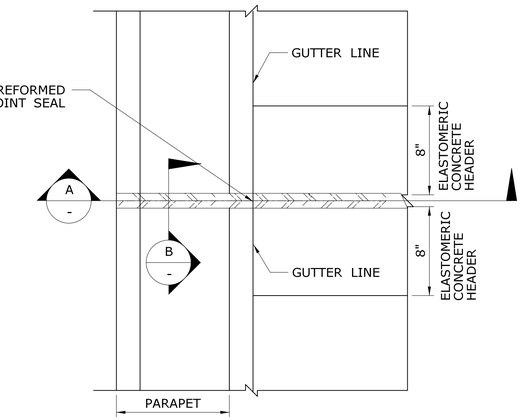
## PREFORMED JOINT SEAL DETAIL (1 / -)

NOT TO SCALE



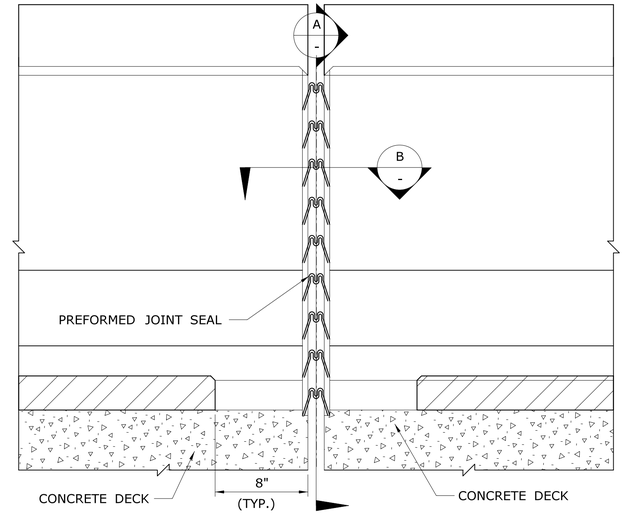

## SECTION THROUGH PARAPET (A / -)

NOT TO SCALE




## PARTIAL PLAN - JOINT TREATMENT IN PARAPET

NOT TO SCALE
NOTE: SILICOFLEX SHOWN




## ELEVATION - JOINT TREATMENT IN PARAPET

NOT TO SCALE
NOTE: SILICOFLEX SHOWN

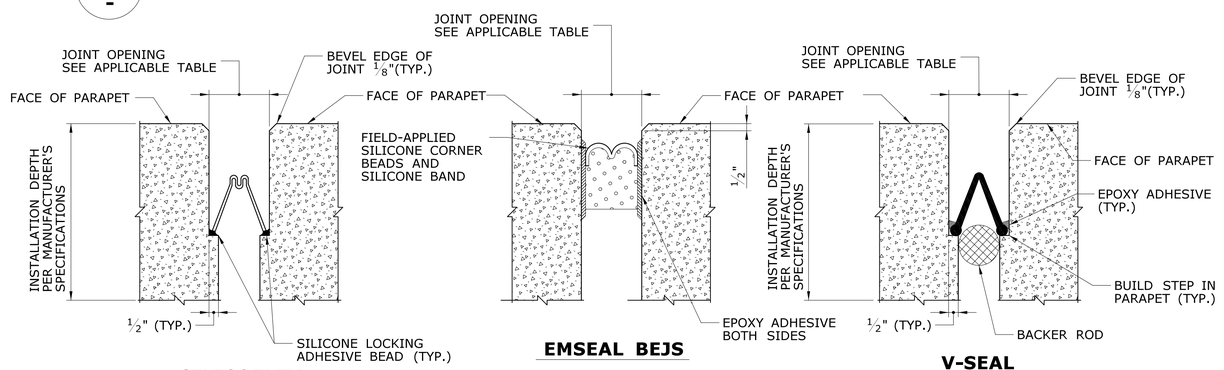
## JOINT OPENING CHART

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPAN EB1 HANGER | | | | | SPAN EB3 HINGE*** | | | | | SPAN EB3 HANGER | | | | |
| TEMP.(F) | 40 | 50 | 60 | 70 | 80 | 40 | 50 | 60 | 70 | 80 | 40 | 50 | 60 | 70 | 80 |
| GAP WIDTH (IN.) | 1 9/16" | 1 1/2" | 1 7/16" | 1 3/8" | 1 1/4" | 1" | 1" | 1" | 1" | 1" | 3 3/16" | 3" | 2 13/16" | 2 5/8" | 2 3/8" |
| | PIER EB4 JOINT* | | | | | SPAN EB6 HINGE*** | | | | | SPAN EB6 HANGER* | | | | |
| TEMP.(F) | 40 | 50 | 60 | 70 | 80 | 40 | 50 | 60 | 70 | 80 | 40 | 50 | 60 | 70 | 80 |
| GAP WIDTH (IN.) | 1 15/16" | 1 3/4" | 1 9/16" | 1 3/8" | 1 1/4" | 1" | 1" | 1" | 1" | 1" | 1 5/8" | 1 1/2" | 1 3/8" | 1 5/16" | 1 3/16" |
| | PIER EB7 JOINT** | | | | | SPAN EB9 WEST HANGER** | | | | | SPAN EB9 EAST HANGER | | | | |
| TEMP.(F) | 40 | 50 | 60 | 70 | 80 | 40 | 50 | 60 | 70 | 80 | 40 | 50 | 60 | 70 | 80 |
| GAP WIDTH (IN.) | 3 3/8" | 3 3/16" | 3" | 2 13/16" | 2 5/8" | 3 3/16" | 3 1/16" | 3" | 2 15/16" | 2 13/16" | 2 1/16" | 2" | 1 15/16" | 1 7/8" | 1 3/4" |

* DECK END JOINT OPENING SET DURING PROJECT 171-360. FIELD VERIFY EXISTING JOINT OPENING.

**DECK END JOINT OPENING SET DURING PROJECT 63-648. FIELD VERIFY EXISTING JOINT OPENING.

***FIXED OPENING JOINTS.




## PREFORMED JOINT SEAL SECTION (B / -)

NOT TO SCALE

## NOTES

1. THE ELASTOMERIC CONCRETE HEADER AND PREFORMED SILICONE JOINT SEAL SHALL BE INSTALLED AFTER THE PAVEMENT HAS BEEN PLACED ON THE BRIDGE AND THE DESIGNATED AREA HAS BEEN SAW CUT AND REMOVED.
2. THE ELASTOMERIC CONCRETE HEADER SHALL BE BEVELED 1/8" BELOW THE BITUMINOUS OVERLAY.
3. VARIABLE GAP WIDTHS DETERMINED AS FOLLOWING:

   -SILICOFLEX: ASSUMED THE USE OF SF400 (SPAN EB3 HANGER, PIER EB7, SPAN EB9 WEST HANGER) AND SF225 (SPAN EB1 HANGER, PIER EB4, SPAN EB6 HANGER, SPAN EB9 EAST HANGER)

   -V-SEAL: ASSUMED THE USE OF V-400

   -EMSEAL: ASSUMED THE USE OF 3" BEJS (DEFORMATION +/- 50% NOM. SIZE) EMSEAL BEJS IS NOT SUITABLE FOR EXISTING JOINT OPENINGS AT PIER EB7 JOINT AND SPAN EB9 WEST HANGER.
4. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL GAP WIDTH NECESSARY TO ACCOMMODATE THE PRODUCT OF CHOICE.
5. JOINT OPENINGS FOR NEW DECK ENDS AT SPAN EB3 AND EB9 EAST HANGERS ASSUME A 1/2" STEP IN DECK END CONCRETE PER SILICOFLEX AND V-SEAL MANUFACTURER RECOMMENDATIONS. DECK END TO DECK END JOINT OPENING IS 1" NARROWER THAN TABLE VALUE. ALL OTHER JOINT OPENINGS ARE BASED ON AS-BUILT CONDITIONS AND DO NOT INCLUDE A STEP.
6. WORK THIS SHEET WITH THE DECK RECONSTRUCTION DETAILS SHOWN ON SHEET S-31 AND THE PARAPET AND CURB DETAILS ON SHEET S-32.
7. JOINT SEAL AND INSTALLATION PAID FOR AS "PREFORMED JOINT SEAL".

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\2887.01_PERFORMED JOINT SEAL DETAILS.dgn

SIGNATURE/ BLOCK:

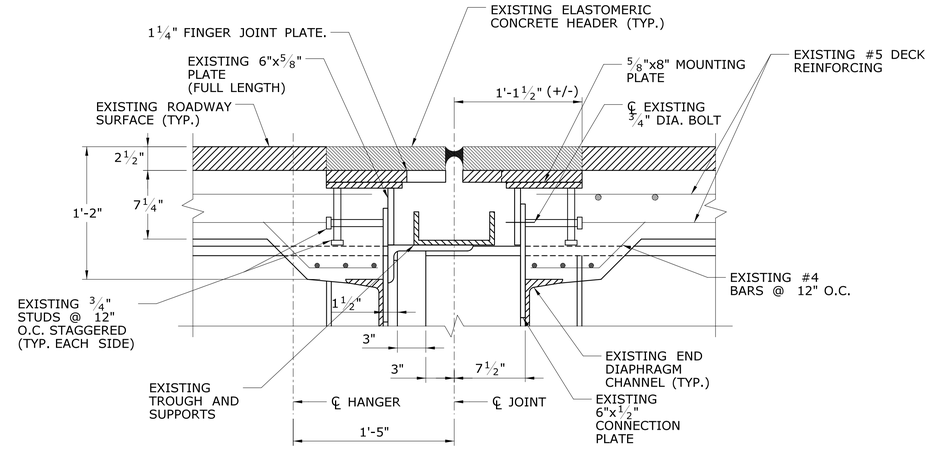
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

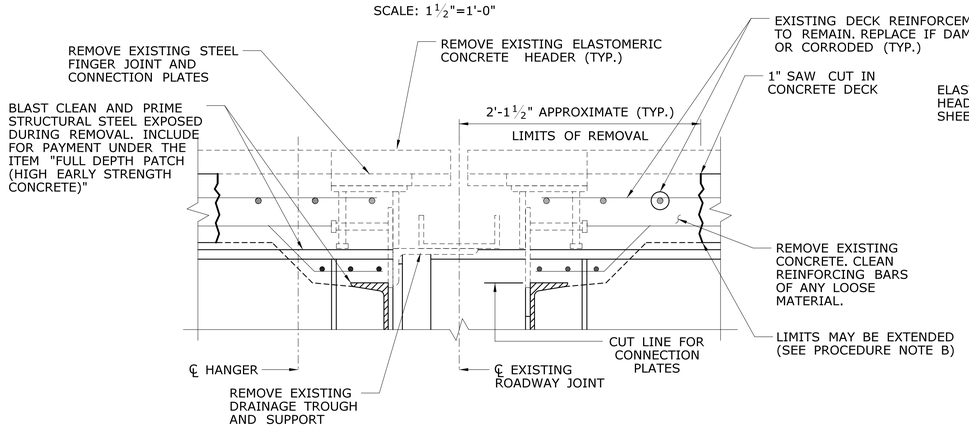
DRAWING TITLE:
**DECK JOINT SEAL DETAILS - 2**

PROJECT NO. **63-700**
DRAWING NO. **S-30**
SHEET NO. **02.04.30**



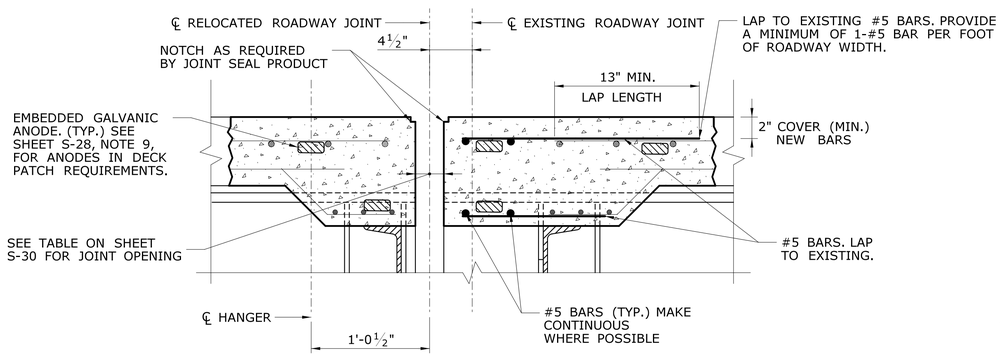

## EXISTING JOINT AT HANGER

SCALE: 1½"=1'-0"



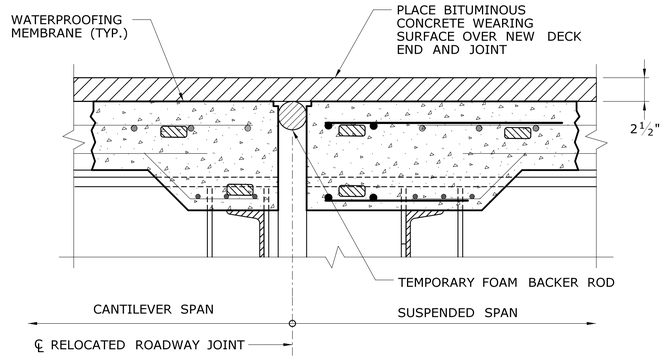

## DECK END DEMOLITION

SCALE: 1½"=1'-0"



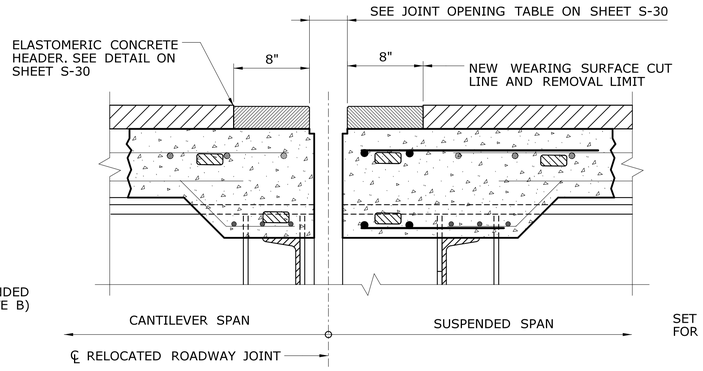

## DECK END RECONSTRUCTION

SCALE: 1½"=1'-0"



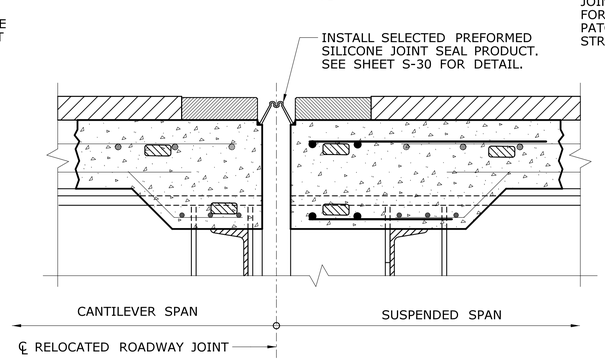

## BITUMINOUS OVERLAY APPLICATION

SCALE: 1½"=1'-0"




## ELASTOMERIC HEADER INSTALLATION

SCALE: 1½"=1'-0"




## JOINT SEAL INSTALLATION

SCALE: 1½"=1'-0"

## DECK END RECONSTRUCTION PROCEDURE

A. DECK END DEMOLITION AND RECONSTRUCTION TO OCCUR AFTER EXISTING WEARING SURFACE AND ELASTOMERIC CONCRETE HEADERS HAVE BEEN MILLED TO EXPOSE THE DECK SURFACE.

B. REMOVE EXISTING DECK END CONCRETE, STEEL JOINT PLATES, DRAINAGE TROUGHS AND SUPPORTS. SAW CUT CONCRETE DECK 1" AT THE LIMITS SHOWN IN THE "DECK END DEMOLITION" DETAIL. LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO REMOVE UNSOUND CONCRETE AND/OR CLEAN EXISTING REINFORCING TO LAP TO. THE CONTRACTOR MAY REMOVE AND REINSTALL TRANSVERSE REINFORCING BARS TO SIMPLIFY DEMOLITION AND REMOVAL.

C. INSTALL NEW REINFORCING STEEL ON THE SUSPENDED SPAN SIDE OF THE JOINT WHERE THE DECK END IS EXTENDED TO MEET THE NEW JOINT LOCATION. MATCH THE EXISTING REINFORCING STEEL SIZE AND SPACING (AS SHOWN IN THE "DECK END RECONSTRUCTION" DETAIL). PLACE NEW CONCRETE, SETTING THE JOINT WIDTH TO THE APPLICABLE SIZE SHOWN IN THE JOINT TABLE ON SHEET S-30. COORDINATE DECK END RECONSTRUCTION WITH THE APPLICABLE PARAPET AND CURB RECONSTRUCTION DETAILS SHOWN ON SHEET S-32.

D. PLACE WATERPROOFING MEMBRANE AND BITUMINOUS CONCRETE OVERLAY. PROVIDE MEANS TO PREVENT OVERLAY MATERIAL FROM FALLING THROUGH OPEN JOINT.

E. CUT BITUMINOUS CONCRETE OVERLAY AND REMOVE TO THE LIMITS SHOWN IN THE "ELASTOMERIC HEADER INSTALLATION" DETAIL THIS SHEET. INSTALL NEW ELASTOMERIC HEADERS PER THE MANUFACTURER'S SPECIFICATIONS AND THE DETAILS SHOWN ON SHEET S-30.

F. ALLOW ELASTOMERIC CONCRETE HEADERS TO CURE AND INSTALL PREFORMED SILICONE JOINT SEAL.

G. REMOVE AND REPLACE ANY CORRODED REINFORCEMENT EXPOSED DURING DEMOLITION.

H. APPLY PRIME COAT TO STRUCTURAL STEEL THAT IS EXPOSED DURING DEMOLITION.

## NOTES

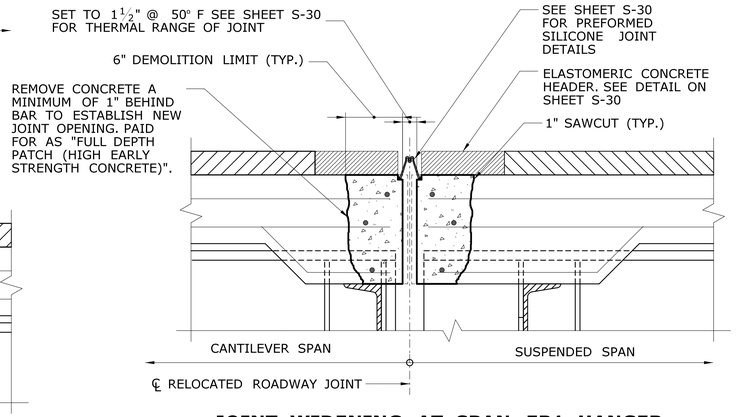
1. DECK END RECONSTRUCTION IS APPLICABLE AT THE JOINTS ABOVE THE SPAN EB3 HANGER AND THE SPAN EB9 EAST HANGER. SEE GENERAL PLAN SHEET S-02 FOR LOCATION.

3. ALL DECK REMOVAL AND REPLACEMENT WORK INCLUDED IN THE ITEM "FULL DEPTH PATCH (HIGH EARLY STRENGTH)".

4. PREFORMED SILICONE JOINT SEAL INCLUDED IN THE ITEM "PREFORMED JOINT SEAL", HEADERS INCLUDED IN THE ITEM "ELASTOMERIC CONCRETE HEADER".

5. WORK THIS SHEET WITH THE PARAPET AND CURB RECONSTRUCTION DETAILS ON SHEET S-32 AND THE JOINT SEAL DETAILS ON SHEET S-30.

6. SEE MAINTENANCE AND PROTECTION OF TRAFFIC AND PROSECTUTION AND PROGRESS SPECIFICATIONS FOR TRAFFIC LIMITATIONS.




## JOINT WIDENING AT SPAN EB1 HANGER

SCALE: 1½"=1'-0"

*IF SPAN EB1 HANGER DECK END CONCRETE IS DETERIORATED BEYOND THE 6" LIMIT SHOWN, PERFORM DECK REPAIRS AS SHOWN ON THIS SHEET.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Deck End Repair.dgn

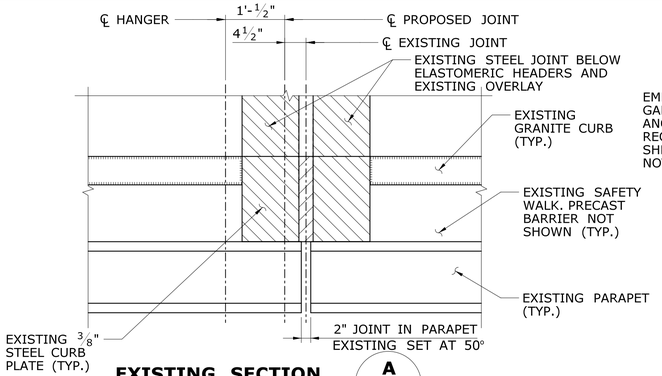
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

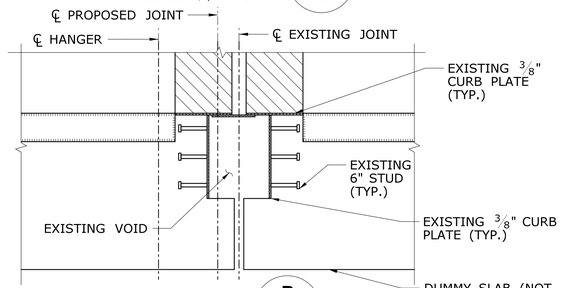
TOWN: HARTFORD
DRAWING TITLE: DECK END REPAIR DETAILS - 1

PROJECT NO. 63-700
DRAWING NO. S-31
SHEET NO. 02.04.31



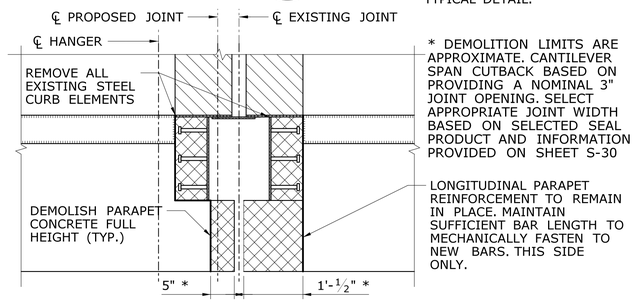

## EXISTING SECTION A

SCALE: ¾" = 1'-0"



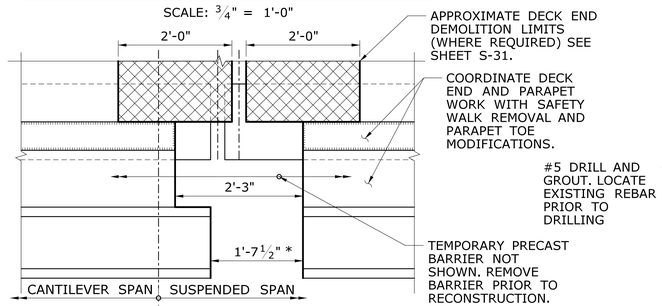

## EXISTING SECTION B

SCALE: ¾" = 1'-0"




## CURB/PARAPET DEMOLITION PLAN

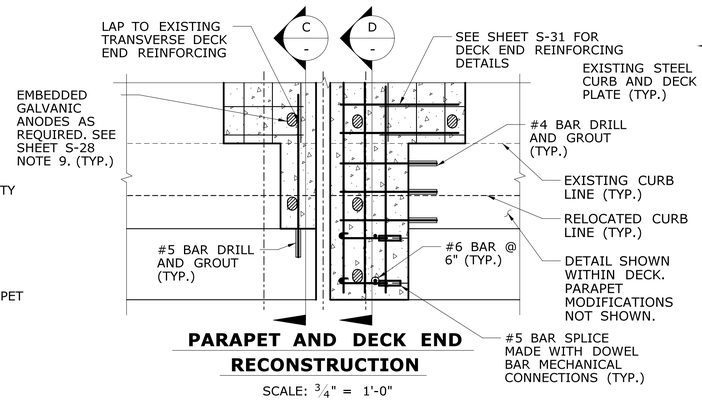
SCALE: ¾" = 1'-0"




## DECK END DEMOLITION PLAN**

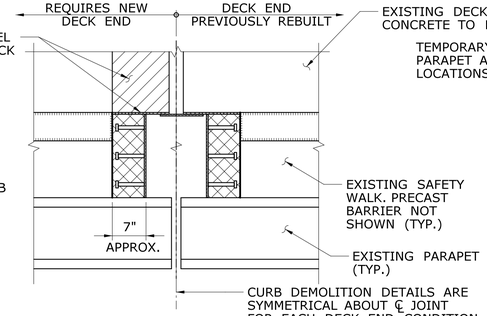
SCALE: ¾" = 1'-0"

**CONDITION SHOWN IS TEMPORARY BETWEEN CONSTRUCTION STAGES



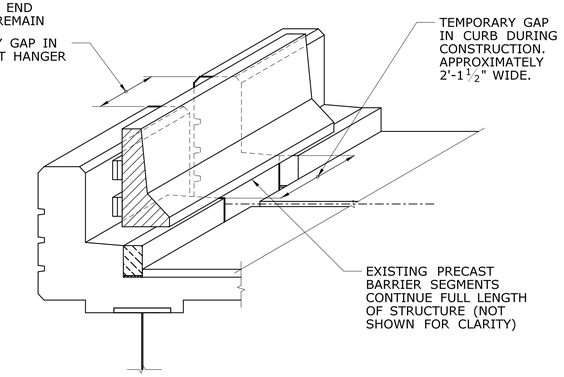

## PARAPET AND DECK END RECONSTRUCTION

SCALE: ¾" = 1'-0"



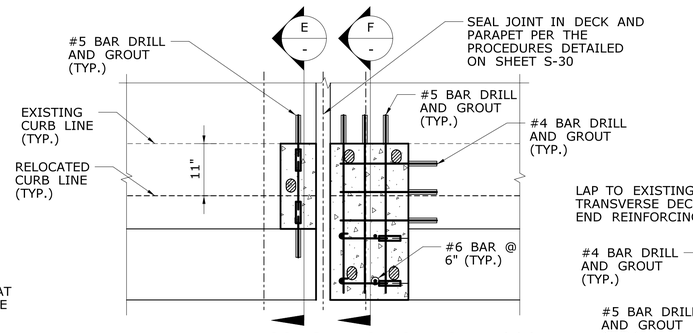

## PARAPET AT PIER JOINTS

SCALE: ¾" = 1'-0"




## TEMPORARY PROTECTION OF PARAPET

FOR INFORMATION ONLY



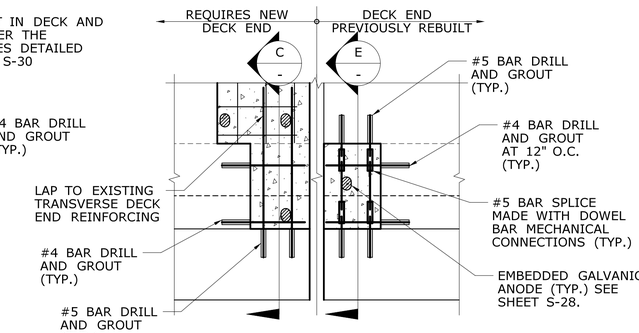

## PARAPET RECONSTRUCTION ONLY***

SCALE: ¾" = 1'-0"

***APPLICABLE AT ALL HANGERS EXCEPT SPAN EB3 AND EB9 EAST

STAGE 1 SUGGESTED SEQUENCE:

1. REMOVE PRECAST BARRIER FROM SAFETY WALK AT JOINT.
2. DEMOLISH PARAPET ADJACENT TO THE JOINT TO THE LIMITS SHOWN. DEMOLISH SAFETY WALK TO THE LIMITS SHOWN AND REMOVE ALL STEEL CURB PLATES. WORK MAY BE PERFORMED FROM OUTSIDE THE STRUCTURE.
3. REPOSITION TEMPORARY PRECAST BARRIER ACROSS OPEN PARAPET AND CURB JOINT. SEE "TEMPORARY PROTECTION OF PARAPET" DETAIL THIS SHEET.

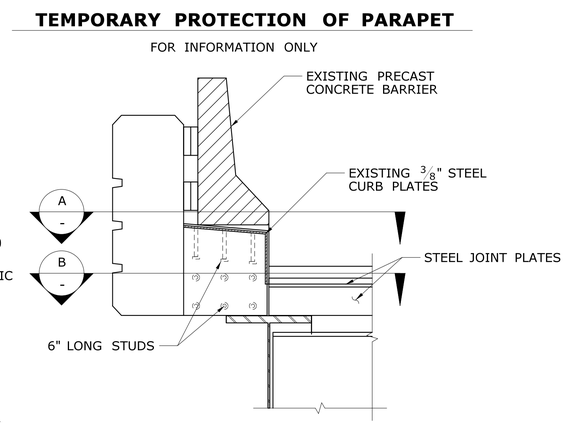



## RECONSTRUCTION AT PIER JOINTS

SCALE: ¾" = 1'-0"

STAGE 2 SUGGESTED SEQUENCE:

1. DEMOLISH EXISTING STEEL JOINT ELEMENTS AND CONCRETE DECK ENDS TO THE LIMITS SHOWN ON SHEET S-31, IF REQUIRED.
2. REMOVE PRECAST BARRIER FROM SAFETY WALK AT JOINT.
3. RECONSTRUCT PARAPET WITH REINFORCEMENT TO MATCH EXISTING. FILL IN SIDEWALK/CURB VOID AS SHOWN IN THE DETAILS. WHERE DECK ENDS ARE RECONSTRUCTED, PLACE PARAPET/CURB CONCRETE MONOLITHICALLY WITH DECK ENDS. COORDINATE RECONSTRUCTION WITH ADJACENT PARAPET MODIFICATIONS.

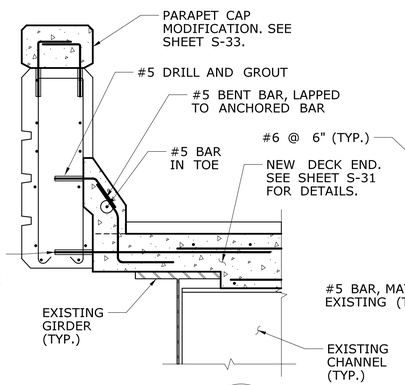



## EXISTING PARAPET AT JOINT

SCALE: ¾" = 1'-0"

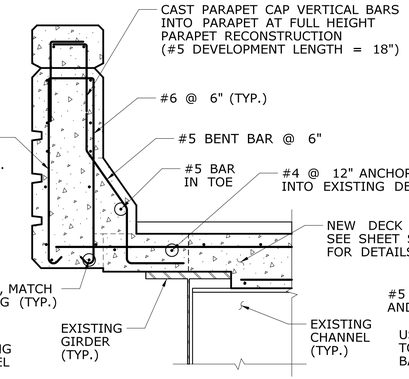
## NOTE

1. REMOVAL OF CURB PLATES, DEMOLITION OF CONCRETE SAFETY WALK AND PARAPET, AND RECONSTRUCTION OF CURB AND PARAPET SHALL BE PAID FOR UNDER THE ITEM "MODIFY BRIDGE PARAPET".
2. PARAPET CAP ON EXISTING PARAPET PAID FOR AS "BRIDGE PARAPET CAP".



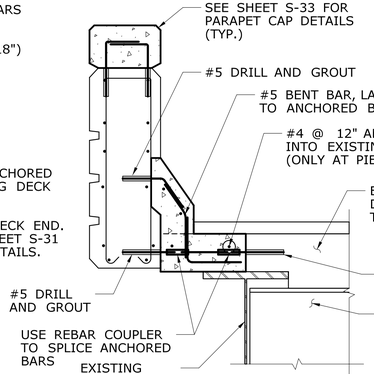

## SECTION C

SCALE: ¾" = 1'-0"



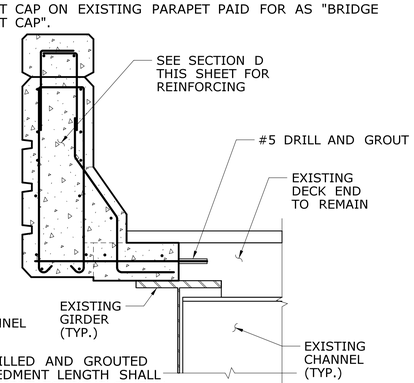

## SECTION D

SCALE: ¾" = 1'-0"




## SECTION E

SCALE: ¾" = 1'-0"




NOTE: DRILLED AND GROUTED BAR EMBEDMENT LENGTH SHALL BE SUFFICIENT TO DEVELOP FULL YEILD STRENGTH OF THE BAR. TYPICAL ALL LOCATIONS.

## SECTION F

SCALE: ¾" = 1'-0"

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Deck End Repair.dgn

SIGNATURE/BLOCK:

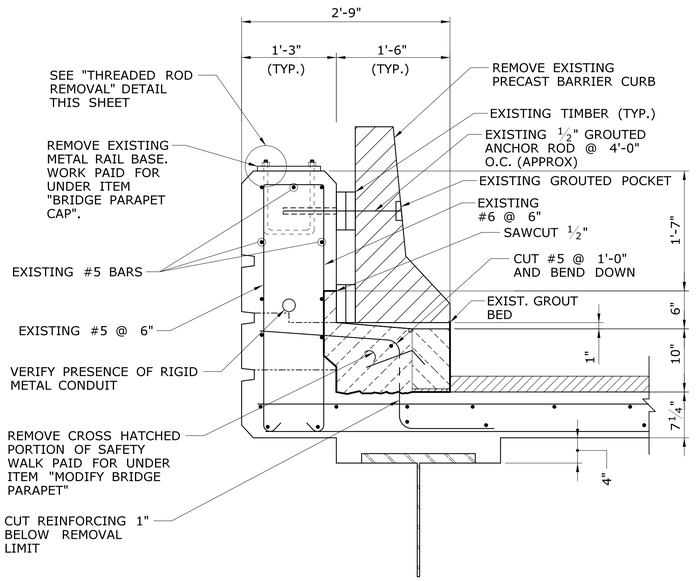
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD

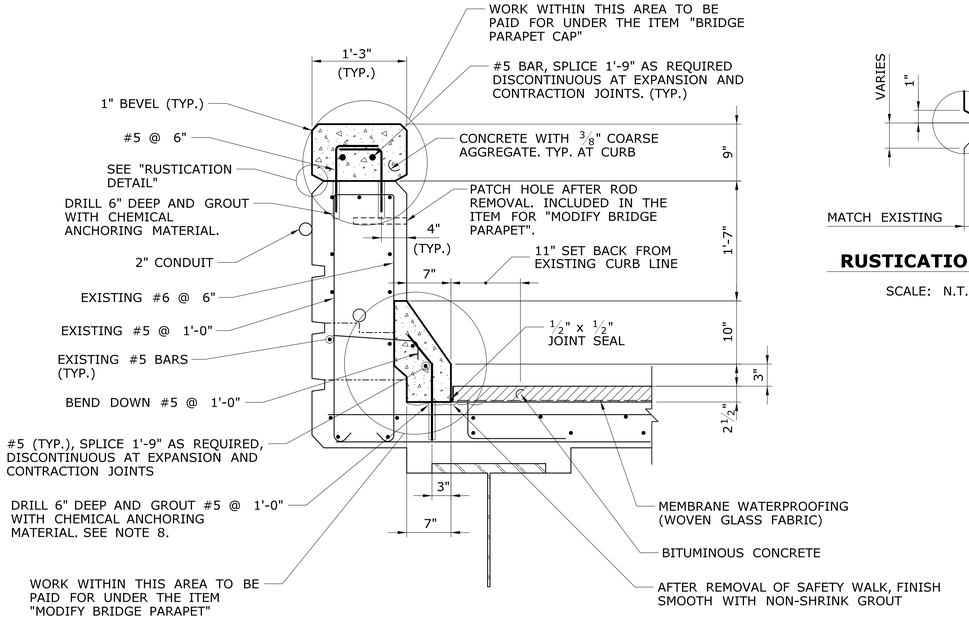
DRAWING TITLE:
DECK END REPAIR DETAILS - 2

PROJECT NO. 63-700
DRAWING NO. S-32
SHEET NO. 02.04.32




## EXISTING PARAPET

SCALE: 1" = 1'-0"



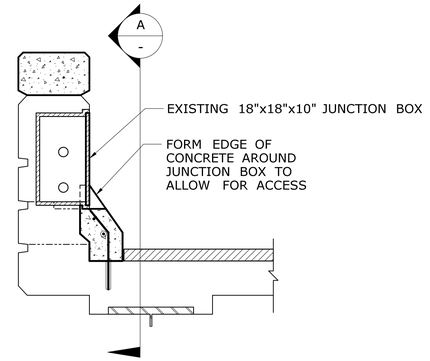

## PARAPET MODIFICATION DETAILS

SCALE: 1" = 1'-0"



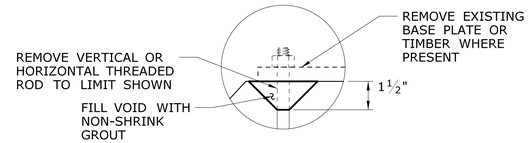

## RUSTICATION DETAIL

SCALE: N.T.S




## RECONSTRUCTED PARAPET SECTION THROUGH JUNCTION BOX

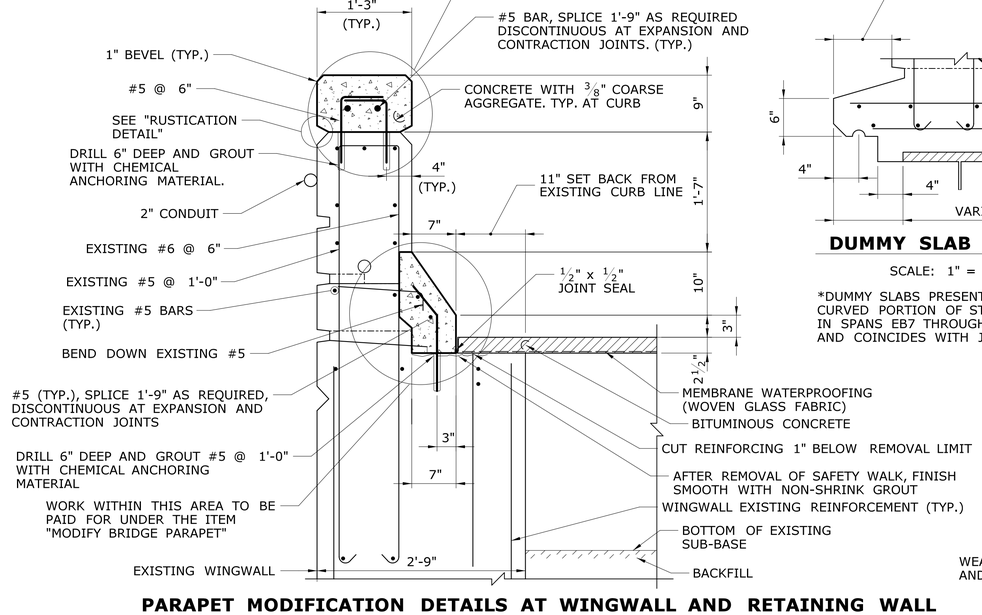
SCALE: 3/4" = 1'-0"




## THREADED ROD REMOVAL*

SCALE: 3" = 1'-0"

* THIS DETAIL ONLY APPLIES TO AREAS STILL EXPOSED TO THE WEATHER AFTER CUTTING AND THE CONSTRUCTION OF THE PARAPET CAP RETROFIT




## PARAPET MODIFICATION DETAILS AT WINGWALL AND RETAINING WALL

SCALE: 1" = 1'-0"

LIMITS OF PARAPET ON WALL

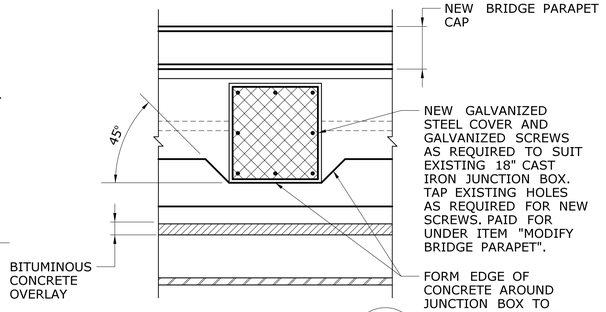
- HIGH STREET OFF RAMP - ℄ OF BEARINGS TO END OF RETAINING WALL "B". - ℄ BEARINGS STA 463+78; END RETAINING WALL "B" STA 465+43
- NORTH WINGWALL OF EAST ABUTMENT - ℄ OF BEARINGS TO END OF WINGWALL ; ℄ OF BEARINGS STA 963+82; END OF WINGWALL STA 964+40




## DUMMY SLAB DETAIL*

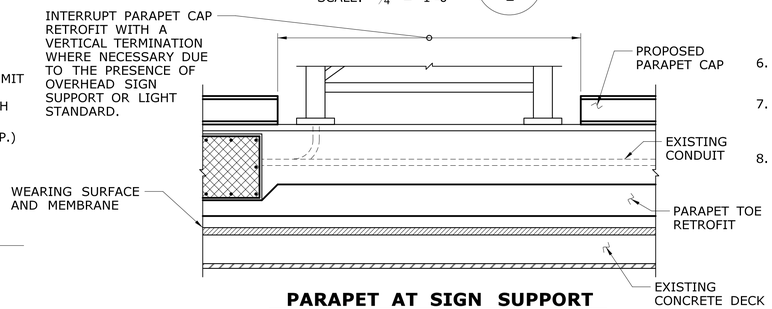
SCALE: 1" = 1'-0"

*DUMMY SLABS PRESENT ON CURVED PORTION OF STRUCTURE IN SPANS EB7 THROUGH EB10 AND COINCIDES WITH JOINTS




## SECTION A - A

SCALE: 3/4" = 1'-0"




## PARAPET AT SIGN SUPPORT

SCALE: 1/2" = 1'-0"

## NOTES

1. THE CONCRETE FOR THE PARAPET MODIFICATIONS SHALL BE A PORTLAND CEMENT CONCRETE WITH A MINIMUM fc= 4000psi, AND SHALL BE DESIGNED BY THE CONTRACTOR.
2. THE REINFORCEMENT SHALL BE UNCOATED AND SHALL CONFORM TO THE ASTM A615, GRADE 60.
3. JOINTS SHALL BE FORMED IN THE SLOPED CURB AND THE PARAPET CAP AT THE JOINTS BETWEEN THE BRIDGE DECK AND WINGWALL PARAPETS, AT EXPANSION JOINTS IN THE BRIDGE DECK, AT THE EXPASION AND CONTRACTION JOINTS IN THE WINGWALL. THE JOINT WIDTH SHALL MATCH THAT OF THE EXISTING ADJACENT JOINT. NO REINFORCEMENT SHALL PASS THROUGH EXPANSION OR CONTRACTION JOINTS. SEE SHEETS S-29 AND S-30 FOR JOINT SEAL DETAILS.
4. THE REMOVAL OF PRE-CAST BARRIER, CONCRETE SAFETY CURB, DRILLING AND GROUTING DOWELS, FURNISHING AND PLACING REINFORCMENT AND PLACING AND FINISHING CONCRETE FOR THE RECONSTRUCTED CURBS SHALL BE PAID FOR UNDER THE ITEM "MODIFY BRIDGE PARAPET".
5. THE REMOVAL AND SALVAGE OF METAL BRIDGE RAIL (IF SPECIFIED FOR SALVAGE), DRILLING AND GROUTING DOWELS INTO THE TOP OF CONCRETE PARAPETS, FURNISHING AND PLACING OF REINFORCEMENT AND PLACING CONCRETE FOR THE RECONSTRUCTED PARAPET CAPS SHALL BE PAID FOR UNDER THE ITEM " BRIDGE PARAPET CAP". AT LOCATIONS WHERE METAL BRIDGE RAIL IS REMOVED AND NO CAP IS PLACED WORK TO REMOVE RAILING AND GROUT IS INCLUDED AS ITEM "REMOVAL OF EXISTING METAL BRIDGE RAIL".
6. DIAMETER OF THE DRILLED HOLES SHALL BE PER THE ANCHOR MANUFACTURER'S REQUIREMENTS.
7. REMOVAL OF ANY EXISTING CURB PLATES IN THE SAFETY WALK SHALL BE PAID FOR UNDER THE ITEM "MODIFY BRIDGE PARAPET". SEE SHEET S-32 FOR CURB MODIFICATION DETAILS.
8. SPANS EB3 AND EB6 ARE COMPOSITE, WITH EITHER STUDS OR SPIRALS AS SHOWN ON REFERENCE SHEET 30 OF 118 (PROJECT 63-167) AND SHEET 58 OF 126 (PROJECT 63-137). THE CONTRACTOR SHALL USE A PACHOMETER PRIOR TO DRILLING TO VERIFY THAT NO EXISTING REINFORCEMENT IS IN PLACE THAT MAY INTERFERE WITH HOLE PLACEMENT.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: BSH
CHECKED BY: SDH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

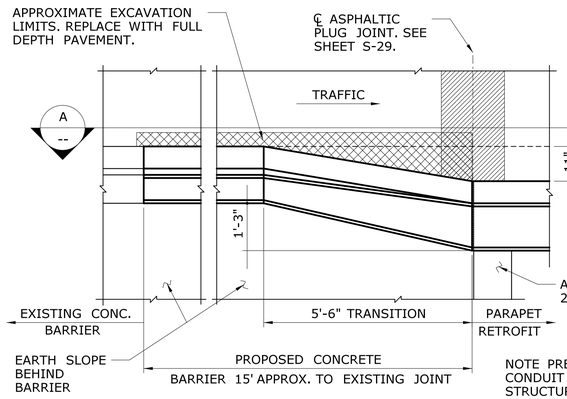
Filename: ...\1765 Parapet Retrofit..1.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

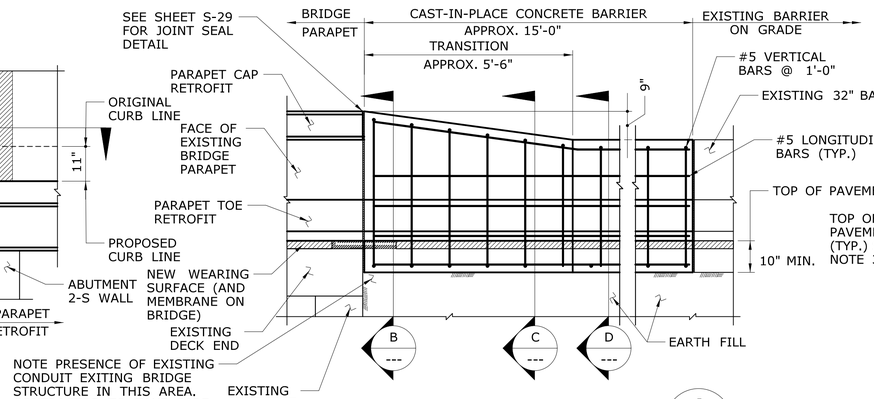
PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**
PROJECT NO. **63-700**
DRAWING TITLE: **PARAPET RETROFIT**
DRAWING NO. **S-33**
SHEET NO. **02.04.33**



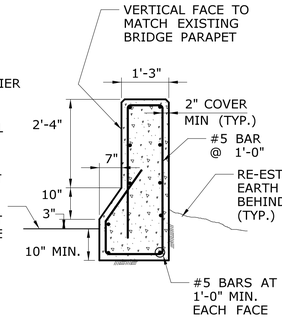

## TRANSITION TYPE 1 PLAN

SCALE: ½" = 1'-0"



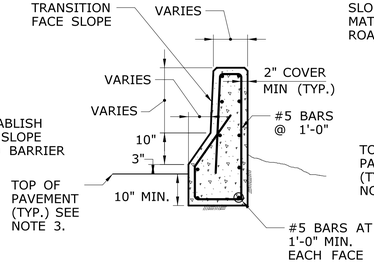

## TRANSITION TYPE 1 ELEVATION

SCALE: ½" = 1'-0"



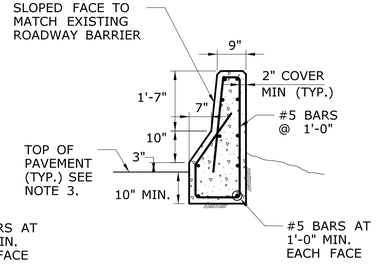

## SECTION A

SCALE: ½" = 1'-0"




## SECTION B

SCALE: ½" = 1'-0"

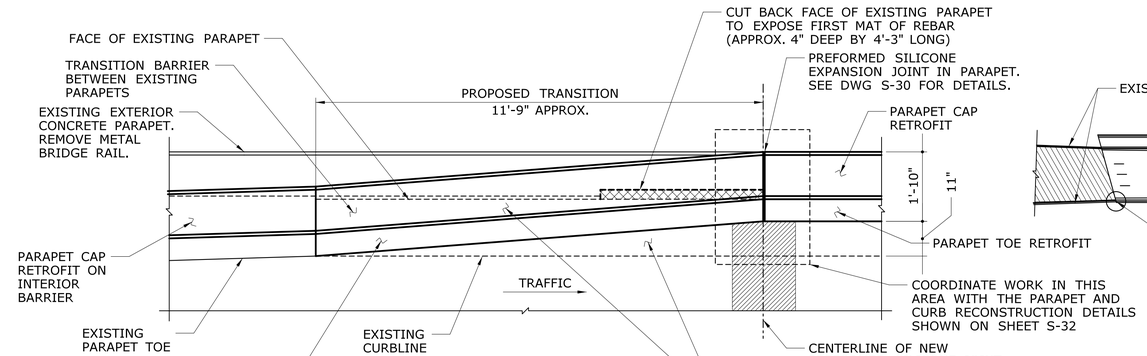



## SECTION C

SCALE: ½" = 1'-0"

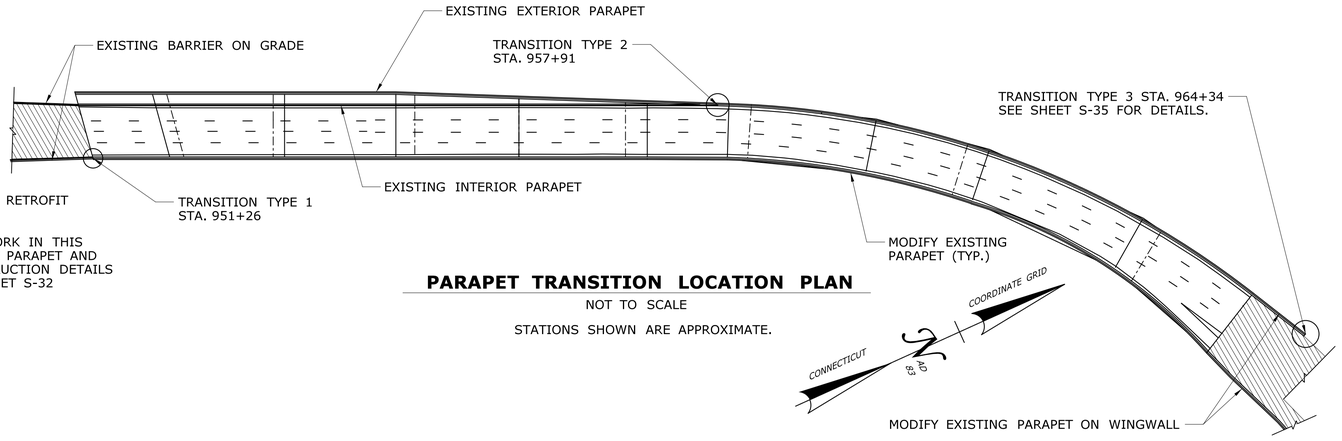
## SECTION D

SCALE: ½" = 1'-0"




## TRANSITION TYPE 2 PLAN

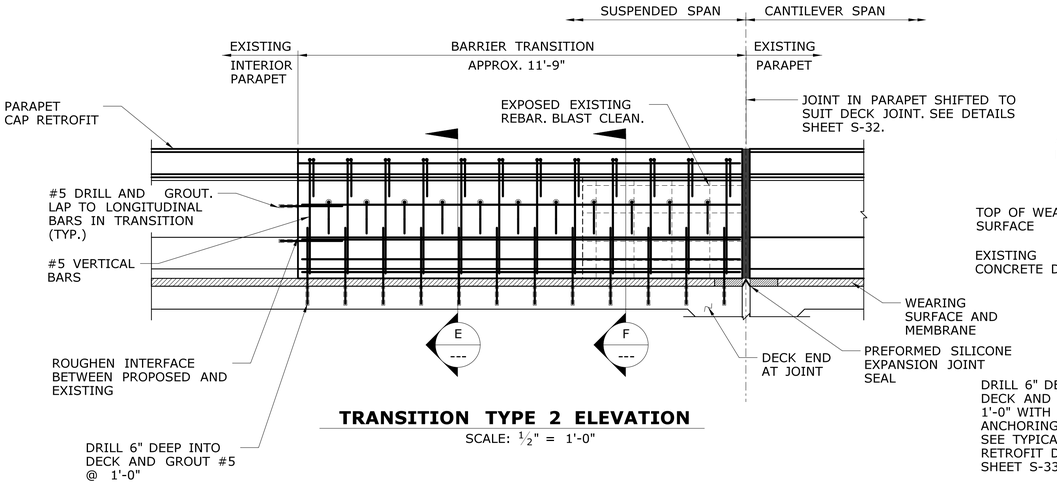
SCALE: ½" = 1'-0"




## PARAPET TRANSITION LOCATION PLAN

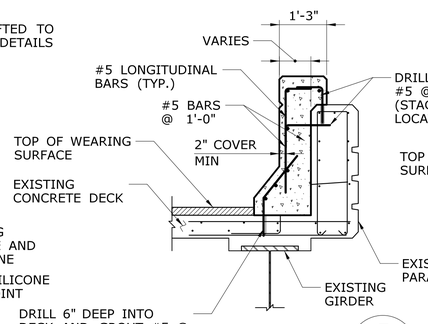
NOT TO SCALE

STATIONS SHOWN ARE APPROXIMATE.



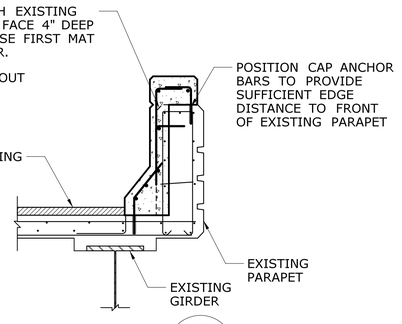

## TRANSITION TYPE 2 ELEVATION

SCALE: ½" = 1'-0"




## SECTION E

SCALE: ½" = 1'-0"




## SECTION F

SCALE: ½" = 1'-0"

## NOTES

1. PARAPET TRANSITIONS CONCRETE SHALL BE PAID FOR UNDER THE ITEM "CLASS 'F' CONCRETE". PARAPET TRANSITION REINFORCEMENT SHALL BE PAID FOR UNDER THE ITEMS "DEFORMED STEEL BARS" AND "DRILLING HOLES AND GROUTING DOWELS".
2. COORDINATE TRANSITION DETAILS WITH TYPICAL PARAPET RETROFIT DETAILS SHOWN ON SHEET S-33, DECK END REPAIRS ON S-31 AND S-32, AND JOINT SEAL DETAILS S-29 AND S-30.
3. RESTORE SUB BASE AND PAVEMENT AFTER REPLACEMENT OF BARRIER TRANSITION SEGMENT. RESTORE WITH 2½" TWO COURSE BITUMINOUS CONCRETE ON 6½" BROKEN STONE BASE (BASED ON ORIGINAL PLAN PAVEMENT DETAILS).
4. THE COST TO REMOVE EXISTING CONCRETE BARRIERS IS INCIDENTAL TO THE ITEM "MODIFY BRIDGE PARAPET".

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Parapet Retrofit_2 - Copy.dgn

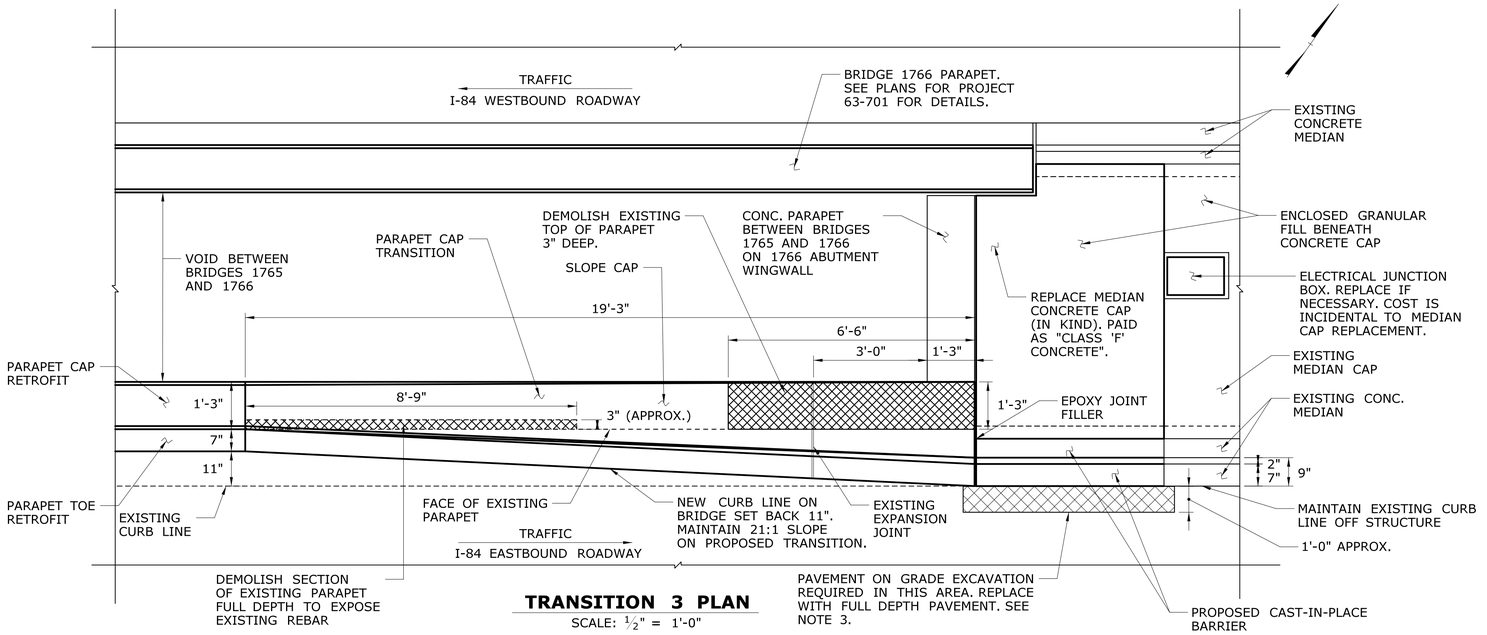
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:

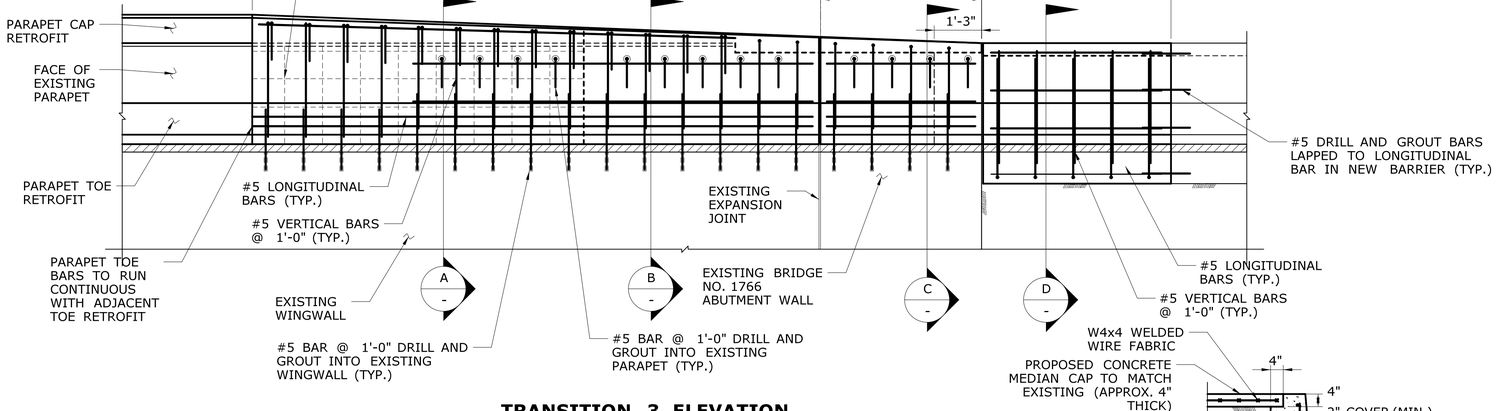
# REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD
PROJECT NO. 63-700
DRAWING TITLE: PARAPET TRANSITION DETAILS - 1
DRAWING NO. S-34
SHEET NO. 02.04.34



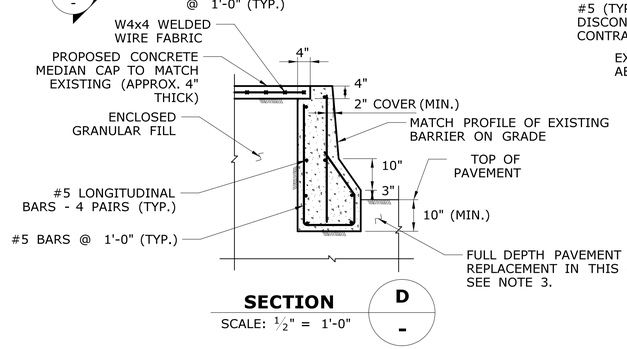

## TRANSITION 3 PLAN

SCALE: ½" = 1'-0"



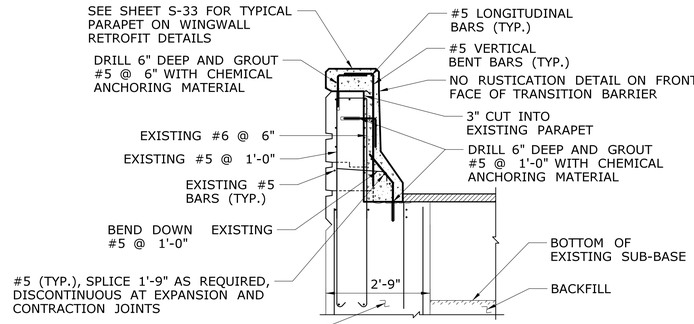

## TRANSITION 3 ELEVATION

SCALE: ½" = 1'-0"



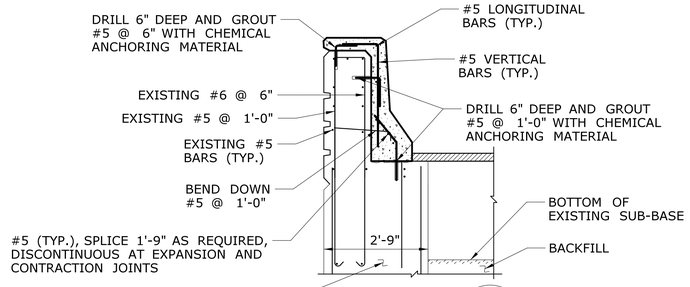

## SECTION D

SCALE: ½" = 1'-0"



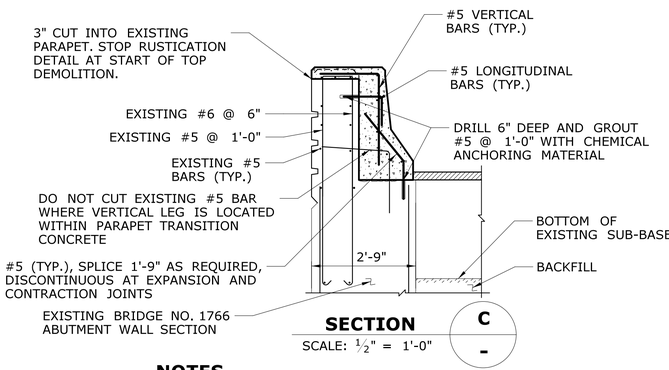

## SECTION A

SCALE: ½" = 1'-0"




## SECTION B

SCALE: ½" = 1'-0"




## SECTION C

SCALE: ½" = 1'-0"

## NOTES

1. PARAPET TRANSITIONS CONCRETE SHALL BE PAID FOR UNDER THE ITEM "CLASS 'F' CONCRETE". PARAPET TRANSITION REINFORCEMENT SHALL BE PAID FOR UNDER THE ITEMS "DEFORMED STEEL BARS" AND "DRILLING HOLES AND GROUTING DOWELS".
2. COORDINATE TRANSITION DETAILS WITH TYPICAL PARAPET RETROFIT DETAILS SHOWN ON SHEET S-24, DECK END REPAIRS ON SHEETS S-31 AND S-32, AND JOINT SEAL DETAILS ON SHEETS S-29 AND S-30.
3. RESTORE SUB BASE AND PAVEMENT AFTER REPLACEMENT OF BARRIER TRANSITION SEGMENT. SEE NOTE 3 SHEET S-34.
4. THE COST TO REMOVE EXISTING CONCRETE BARRIERS IS INCIDENTAL TO THE ITEM "MODIFY BRIDGE PARAPET".

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Parapet Retrofit..3.dgn

SIGNATURE/ BLOCK:

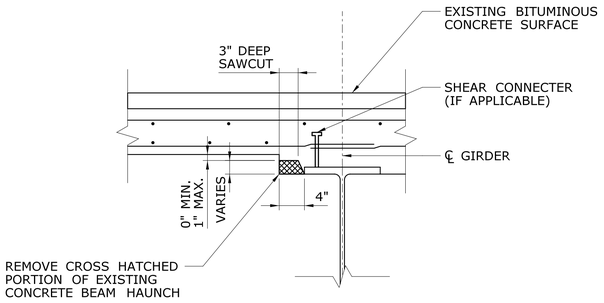
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

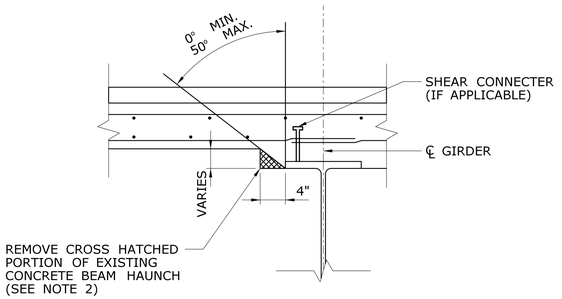
DRAWING TITLE:
**PARAPET TRANSITION DETAILS - 2**

PROJECT NO. **63-700**
DRAWING NO. **S-35**
SHEET NO. **02.04.35**



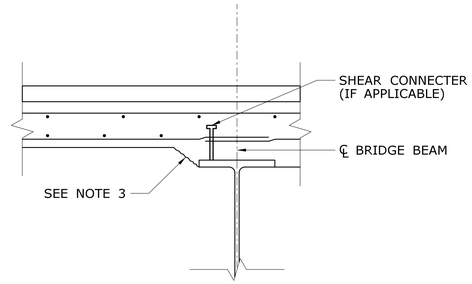

## HAUNCH REMOVAL METHOD

SCALE: ½" = 1'-0"



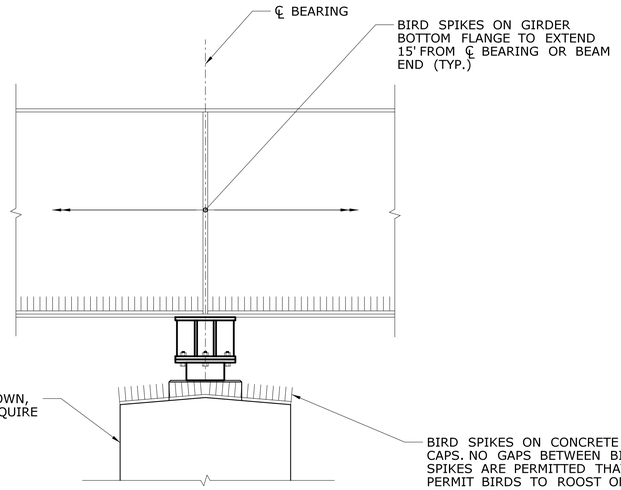

## LIMITED ACCESS HAUNCH REMOVAL METHOD

SCALE: ½" = 1'-0"



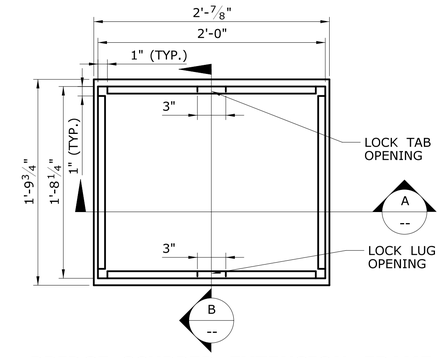

## FINAL HAUNCH CONDITION

SCALE: ½" = 1'-0"



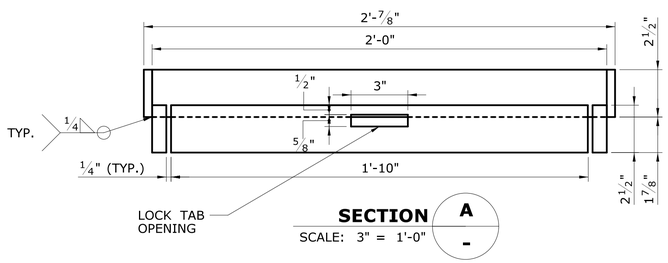

## BIRD SPIKES

SCALE: ½" = 1'-0"



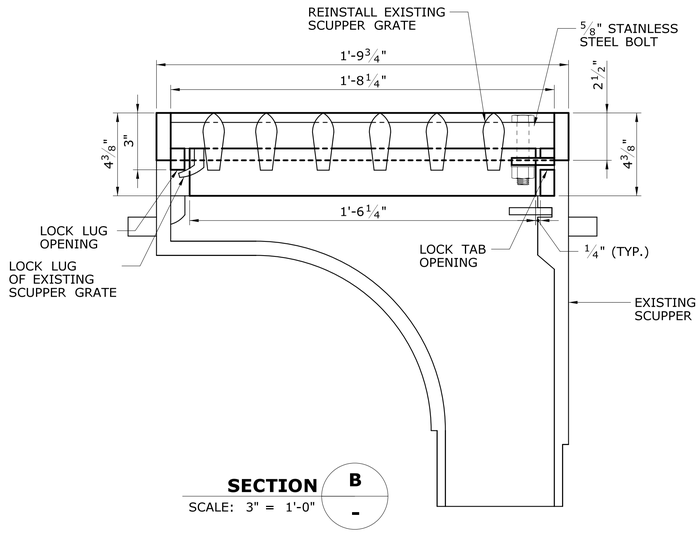

## BRIDGE SCUPPER EXTENSION FRAME

SCALE: 1½" = 1'-0"




## SECTION A

SCALE: 3" = 1'-0"




## SECTION B

SCALE: 3" = 1'-0"

## CONCRETE HAUNCH REMOVAL NOTES

1. THE REMOVAL OF THE PORTION OF THE CONCRETE HAUNCH SHOWN SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT FOR "CONCRETE HAUNCH REMOVAL."
2. THIS METHOD TO BE USED ONLY IN THOSE AREAS HAVING INSUFFICIENT CLEARANCE FOR SAW-CUTTING EQUIPMENT, AREAS MAY INCLUDE LOCATIONS ABOVE DIAPHRAGMS OR OTHER LOCATIONS DIRECTED BY THE ENGINEER. SEE SHEETS S-26 AND S-27 FOR APPROXIMATE LOCATIONS OF HAUNCH REMOVAL.
3. IF OVER-REMOVAL RESULTS, APPLY TWO COATS OF EPOXY RESIN TO THE DECK REINFORCING STEEL EXPOSED DURING HAUNCH REMOVAL. ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO AVOID THIS CONDITION
4. CONCRETE HAUNCHES ARE TO BE REMOVED AT ALL LOCATIONS OVER EXISTING PARKING LOTS, SIDEWALKS, ROADWAYS AND RAILROAD RIGHT OF WAY.
5. PROTECT UNDERLYING PARKING LOTS, SIDEWALKS, ROADWAYS, AND RAILROAD R.O.W. USING PROTECTIVE SHIELDING. SHIELDING INCLUDED AS INCIDENTAL TO THE ITEM FOR "CONCRETE HAUNCH REMOVAL".

## SCUPPER EXTENSION FRAME NOTES

1. EXISTING SCUPPER GRATES SHALL BE SALVAGED FOR REUSE.
2. AFTER REMOVAL OF BITUMINOUS CONCRETE AND PRIOR TO PLACING THE SCUPPER EXTENSION FRAME, THE CONTRACTOR SHALL PLACE SILICONE SEALANT AROUND THE PERIMETER OF THE EXISTING SCUPPER INTERFACE WITH THE BRIDGE DECK.
3. BOND THE SCUPPER EXTENSION FRAME TO THE EXISTING SCUPPER USING A TWO PART EPOXY.

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Bird SpikesHaunch Removal.dgn

SIGNATURE/ BLOCK:

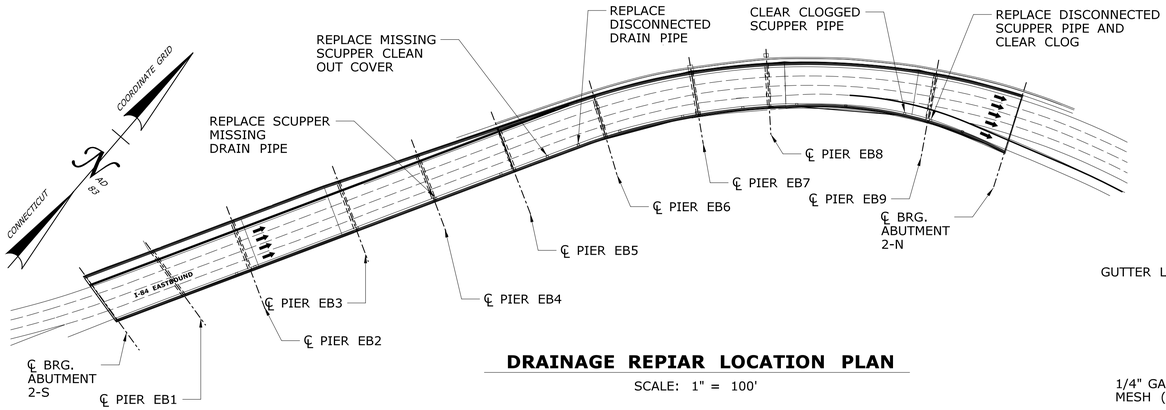
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

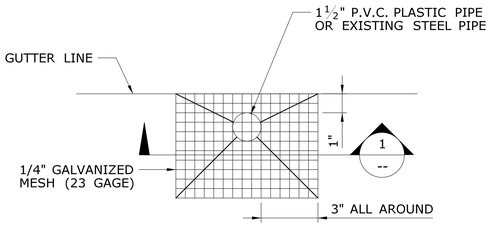
DRAWING TITLE: **MISCELLANEOUS DETAILS**

PROJECT NO. **63-700**
DRAWING NO. **S-36**
SHEET NO. **02.04.36**



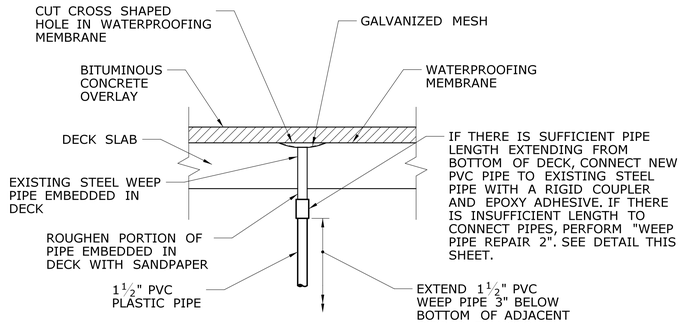

## DRAINAGE REPIAR LOCATION PLAN

SCALE: 1" = 100'



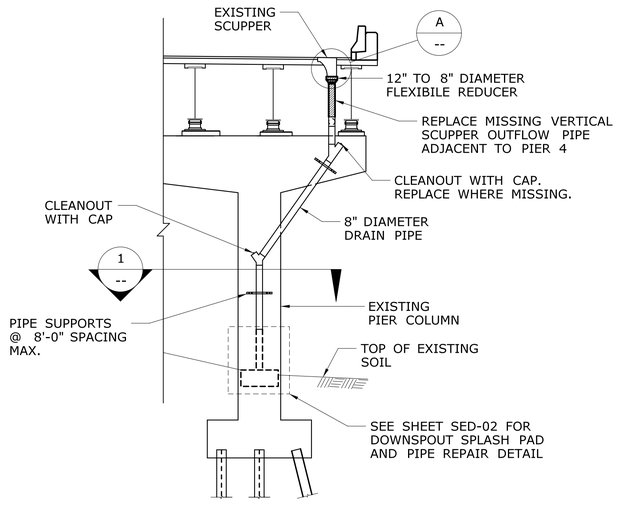

## WEEPHOLE PLAN

SCALE: NOT TO SCALE



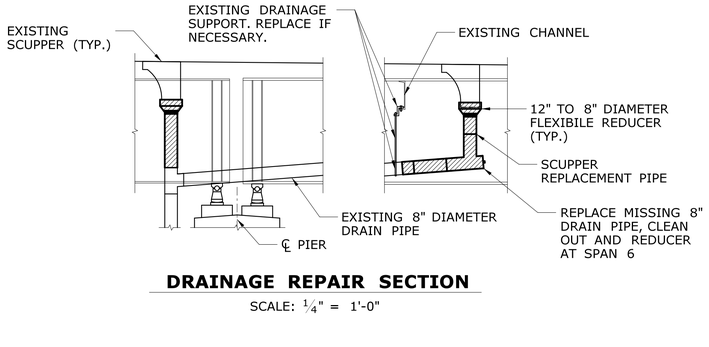

## WEEP PIPE REPAIR 1

SCALE: NOT TO SCALE



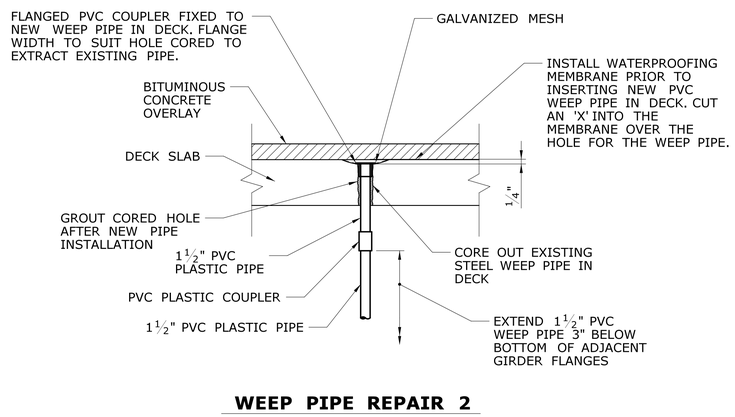

## DRAINAGE REPAIR ELEVATION

SCALE: 1/8" = 1'-0"



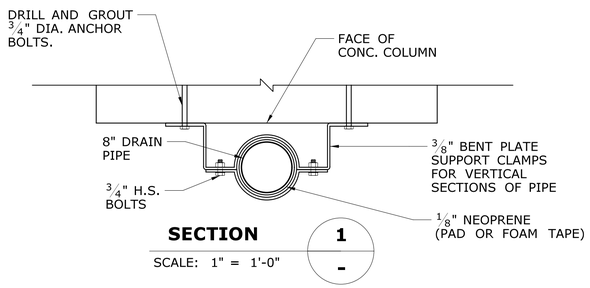

## DRAINAGE REPAIR SECTION

SCALE: 1/4" = 1'-0"



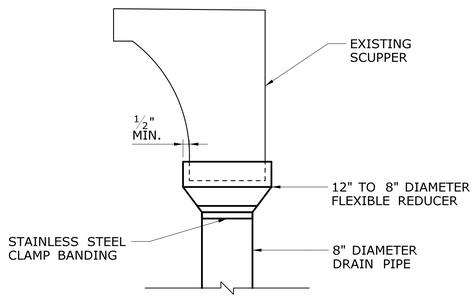

## WEEP PIPE REPAIR 2

SCALE: NOT TO SCALE




## SECTION 1 -

SCALE: 1" = 1'-0"




## DETAIL A -

SCALE: 1" = 1'-0"

## NOTES

1. ELEVATIONS SHOWN ARE TYPICAL EXISTING DRAINAGE CONFIGURATIONS. THE CONTRACTOR SHALL IDENTIFY ALL NON-FUNCTIONING DRAIN PIPES TO BE REPLACED AND SUBMIT DETAILED SHOP DRAWINGS OF ALL DRAINAGE PIPING, INCLUDING PIPE LENGTHS, SLOPES, SUPPORT POINTS, AND TYPES APPROVAL PRIOR TO FABRICATION AND ERECTION.
2. WHERE SLOPED SECTIONS OF DRAIN PIPE ARE REQUIRED, THE CONTRACTOR SHALL PROVIDE A CONTINUOUS ASSMEBLY TO THE CLOSEST PIER COLUMN TO PRODUCE THE STEEPEST SLOPE POSSIBLE (8% MINIMUM).
3. ALL DRAIN PIPE SHALL MEET ASTM D 2996. ALL FITTINGS, COUPLINGS, AND ELBOWS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D 3840.
4. FASTENERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
5. CLEANOUTS SHALL BE LOCATED AND POSITIONED TO ACCOMODATE PROBABLE CLEANING METHODS.
6. ATTACHMENTS ARE TO BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.
7. DOWNSPOUTS SHALL DISCHARGE ABOVE GROUND. DISCHARGE SHALL BE DIRECTED BY SURFACE FLOW TOWARD RECEIVING DRAINAGE STRUCTURES. SEE DRAWING SED-02.
8. ALIGN NEW DRAINAGE PIPE TO EXISTING SCUPPER TO ALLOW A MINIMUM OF ½" CLEAR BETWEEN THE REDUCER AND THE SCUPPER OUTLET. STAINLESS STEEL CLAMP BANDING AT THE 10" SECTION SHALL NOT BE INSTALLED.
9. THE WORK SHOWN IN THE DETAILS "WEEP PIPE REPAIR 1", "WEEP PIPE REPAIR 2" AND "WEEP HOLE PLAN" SHALL BE INCLUDED FOR PAYMENT UNDER THE ITEM "EXTEND EXISTING WEEPHOLE".

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: MSF
CHECKED BY: BSH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

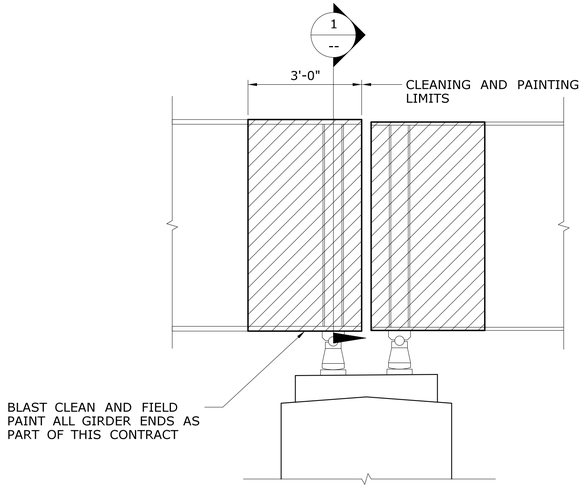
Filename: ...\1765 - Drainage.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

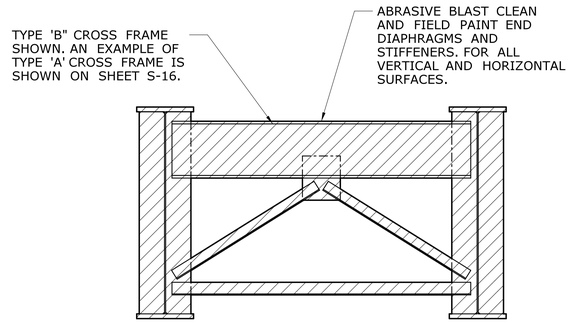
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

TOWN: HARTFORD
PROJECT NO. 63-700
DRAWING TITLE: DRAINAGE REPAIR PLAN AND DETAILS
DRAWING NO. S-37
SHEET NO. 02.04.37



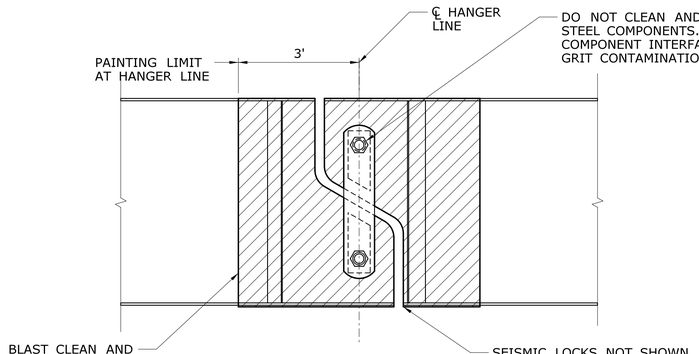

**PARTIAL PAINTING LIMITS**

SCALE: ½" = 1'-0"



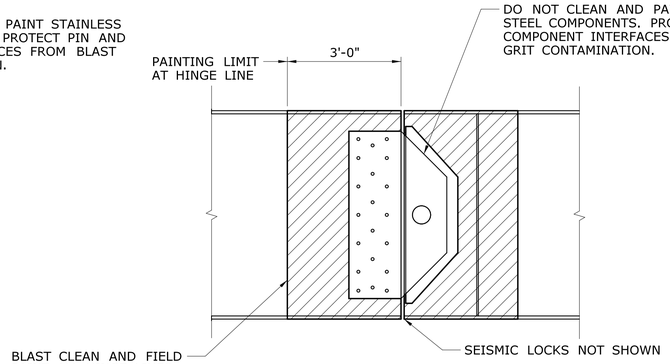

**DIAPHRAGM SECTION** 1 / -

SCALE: ½" = 1'-0"




**PIN AND HANGER PAINTING LIMITS**

SCALE: ½" = 1'-0"




**HINGE PAINTING LIMITS**

SCALE: ½" = 1'-0"

## WORK SHIELDING AND PLATFORM NOTES:

1. THE CONTRACTOR SHALL PROVIDE PROTECTIVE BARRIERS FOR ALL WORK ABOVE ACTIVE ROADWAYS, SIDEWALKS, PARKING AREAS, AND AMTRAK RAILROAD.
2. WORK OVER THE RAILROAD SHALL BE STAGED IN COMPLIANCE WITH A SITE SPECIFIC WORK PLAN PREPARED BY THE CONTRACTOR FOR THE APPROVAL OF THE RAILROAD. WHERE WORK IS STAGED FROM RIGID WORK LATFORMS AND CONTAINMENT THAT IS CONNECTED TO THE STRUCTURE ABOVE, SUCH PLATFORMS SHALL MEET HE RAILROAD'S REQUIREMENTS AND SHALL BE SUBMITTED FOR THE RAILROAD'S APPROVAL.
3. THE CONTRACTOR'S WORKING DRAWINGS FOR SHIELDS OVER THE RAILROAD SHALL INCLUDE ALL MINIMUM PROPOSED VERTICAL CLEARANCES TO THE TOP OF RAIL.
4. WORK OVER AREAS OTHER THAN THE RAILROAD SHALL BE STAGED IN ACCORDANCE WITH WORK PLANS DEVELOPED FOR THE REVIEW AND APPROVAL OF THE RESIDENT ENGINEER. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
5. TEMPORARY PROTECTIVE BARRIERS OVER THE RAILROAD SHALL BE CONSIDERED INCIDENTAL TO WORK NECESSARY. THESE BARRIERS SHALL MEET THE RAILROAD'S REQUIREMENTS FOR HORIZONTAL AND VERTICAL SHIELDING. SEE SPECIAL PROVISIONS.
6. TEMPORARY PROTECTIVE BARRIERS ARE INCIDENTAL TO THE WORK FOR WHICH THEY ARE REQUIRED.
7. WHERE ABRASIVE BLAST CLEANING AND FIELD PAINTING IS TO BE PERFORMED, THE PLATFORMS SHALL SATISFY THE REQUIREMENTS FOR "CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE No. 2)", AND SHALL BE INCLUDED FOR PAYMENT AS NOTED THEREIN. WHERE THE WORK IS TO BE PERFORMED OVER THE RAILROAD, THE PLATFORMS SHALL MEET ADDITIONAL HORIZONTAL AND VERTICAL SHIELDING REQUIREMENTS AS IDENTIFIED IN THE SPECIAL PROVISIONS.

## ABRASIVE BLAST CLEANING AND FIELD PAINTING NOTES:

1. THIS STRUCTURE WAS ORIGINALLY COATED WITH A LEAD BASED PAINT SYSTEM.
2. THE EXISTING COATING SHALL BE REMOVED IN THE AREAS NOTED PRIOR TO THE APPLICATION OF THE NEW COATING SYSTEM.
3. REMOVAL OF THE EXISTING LEAD BASED PAINT SYSTEM REQUIRES WORK PLATFORMS MEETING THE REQUIREMENTS IN THE SPECIAL PROVISION FOR "CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS".
4. ABRASIVE BLAST CLEANING, FIELD PAINTING, AND DISPOSAL OF LEAD DEBRIS SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
5. THE CONTRACTOR SHALL IMPLEMENT A SITE SPECIFIC LEAD COMPLIANCE PLAN PREPARED BY A CERTIFIED INDUSTRIAL HYGENIST IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
6. AFTER ABRASIVE BLAST CLEANING AND BEFORE THE APPLICATION OF THE PRIME COAT, THE CONTRACTOR SHALL PROVIDE ACCESS TO THE ENGINEER FOR THE INSPECTION OF THE EXISTING STEEL TO DETERMINE REMAINING THICKNESS.
7. THIS WORK SHALL BE GOVERNED BY THE SPECIAL PROVISION FOR "ABRASIVE BLAST CLEANING AND PAINTING OF BEAM ENDS (SITE No. 2)".
8. THE SPECIAL PROVISION FOR "LOCALIZED PAINT REMOVAL & FIELD PAINTING OF EXISTING STEEL" SHALL GOVERN ADDITIONAL AREAS WHERE PAINT REMOVAL AND RECOATING IS INCIDENTAL TO OTHER WORK ITEMS.

## CONTAINMENT NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PLATFORMS IN COMPLIANCE WITH THE RAILROAD'S SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT, FOR RAILROAD APPROVAL, CALCULATIONS AND DETAILED WORKING DRAWINGS FOR THE CONTAINMENT SYSTEM. DESIGN CALCULATIONS OF THE WORK PLATFORM SHALL INCLUDE LOCATION OF PLATFORM SUPPORTS AND LOADING WHICH SHALL NOT PRODUCE A LOADING CONDITION THAT MAY OVERSTRESS THE STRUCTURE. SEE SPECIAL PROVISIONS.
2. DESIGN LOADS SHALL BE GOVERNED BY THE RAILROAD REQUIREMENTS (I&C SPECIFICATION 01520A-1 SECTION 3.1E). DESIGN WIND LOAD IS 30 PSF.
3. THE CONTRACTOR IS RESPONSIBLE FOR LABOR AND EXPENSES RELATED TO COORDINATION WITH THE RAILROAD DURING ALL FIELD ACTIVITIES, INCLUDING THE WORK TO SECURE ACCESS PERMITS AND FLAG PROTECTION DURING THE PERIODS THAT THE CONTAINMENT IS IN PLACE AND OCCUPIED.
4. RIGID CONTAINMENT OCCUPANCY SHALL BE GOVERNED BY THE RAILROAD REQUIREMENTS.
5. WHEN WIND SPEED EXCEEDS 30 MPH ALL WORK SHALL STOP. DUST AND SAND SHALL BE REMOVED FROM THE PLATFORM. WHEN WIND SPEED EXCEEDS 40 MPH, ALL ENCLOSURE CONTAINMENT AND TARPS SHALL BE REMOVED FROM THE PLATFORMS.
6. ABRASIVE AND WASTE DEBRIS SHALL BE REMOVED AS REQUIRED AND/OR ON A DAILY BASIS SO AS NOT TO EXCEED THE CAPACITY OF THE STRUCTURE OR PLATFORM.
7. CONSTRUCTION AND ERECTION OF THE WORK PLATFORM AND CONTAINMENT STRUCTURE SHALL BE SCHEDULED TO COMPLY WITH RAILROAD REQUIREMENTS.
8. CONTAINMENT INCLUDED FOR PAYMENT UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE No. 2)".

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: BSH
CHECKED BY: SDH
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\1765 Contain-Paint.dgn

SIGNATURE/ BLOCK:

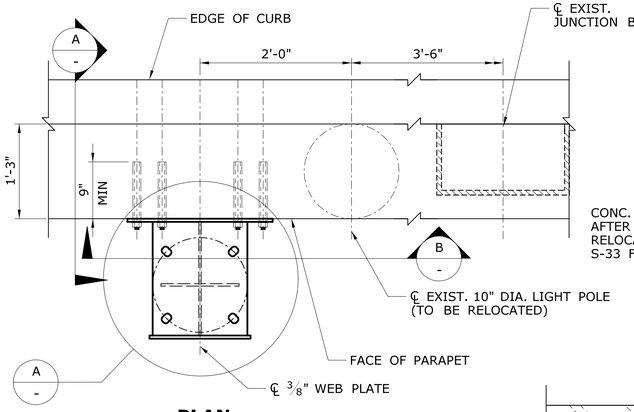
Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 01765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS

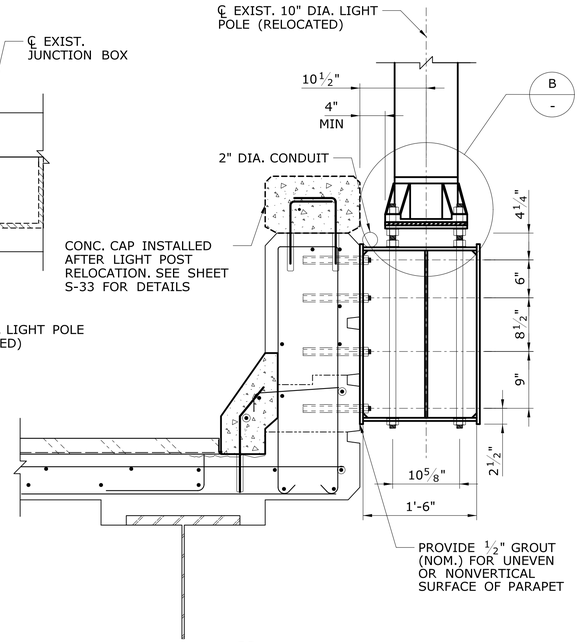
TOWN: HARTFORD
PROJECT NO. 63-700
DRAWING TITLE: PAINTING & CONTAINMENT
DRAWING NO. S-38
SHEET NO. 02.04.38

## NOTES

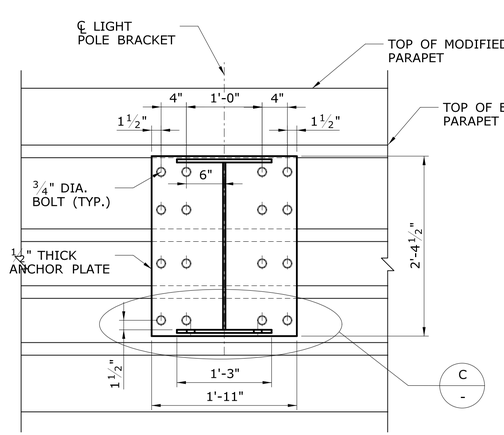
1. DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2014, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, 2003 AND AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 2015.
2. STRUCTURAL STEEL SHAPES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 50T2. STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B OR ANSI A501.
3. HIGH STRENGTH BOLTS, HEAVY HEX LOCK NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325, TYPE 1. ANCHOR BOLTS SHALL MEET ASTM F1554 GR 55. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A153.
4. DRILLING HOLES AND GROUTING ANCHOR BOLTS INTO EXISTING PARAPET SHALL BE LOCATED NO LESS THAN 1'-0" FROM PARAPET EXPANSION JOINTS OR PARAFFIN COATED JOINT.
5. PAID FOR AS "LIGHT STANDARD ACHORAGE" WHICH INCLUDES ATTACHEMENT TO THE PARAPAET.
6. WORK TO INSTALL LIGHT STANDARDS ON THE ANCHORAGE SHALL BE PAID FOR AS "REMOVE AND REINSTALL LIGHT STANDARD."
7. SEE SUBSET 02.05 SHEETS LTG-01 TO LTG-05 FOR ILLUMINATION DETAILS.



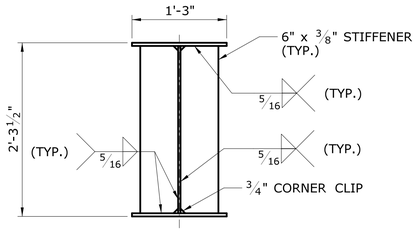

**PLAN**
SCALE: 1" = 1'-0"



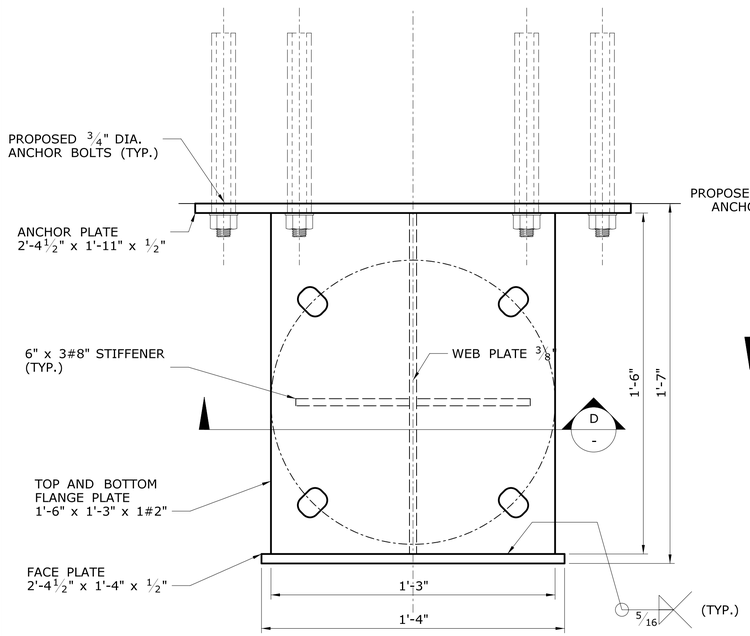

**SECTION** A -
SCALE: 1" = 1'-0"



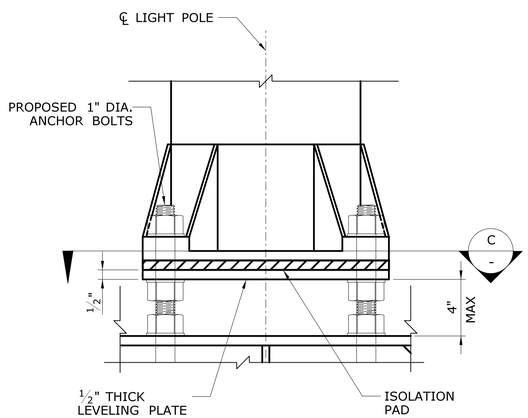

**SECTION** B -
SCALE: 1" = 1'-0"



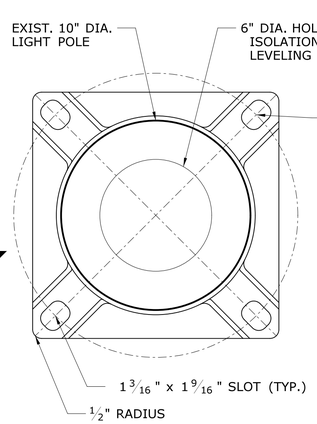

**SECTION** D -
SCALE: 1" = 1'-0"



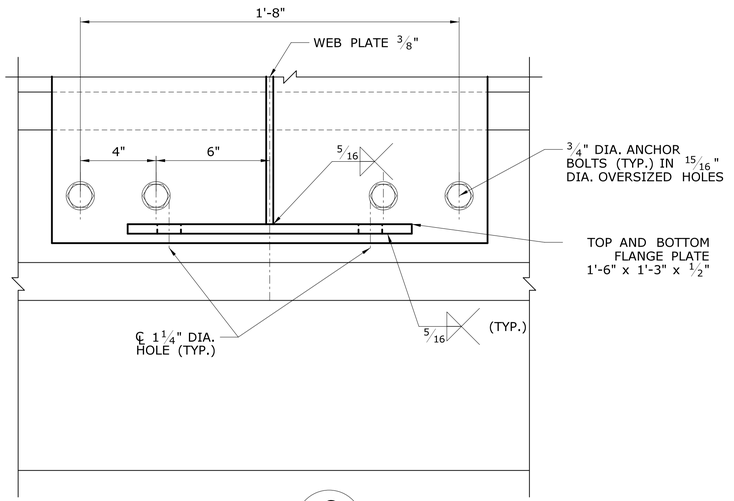

**DETAIL** A -
SCALE: 3" = 1'-0"




**DETAIL** B -
SCALE: 3" = 1'-0"




**SECTION** C -
SCALE: 1" = 1'-0"




**DETAIL** C -
SCALE: 3" = 1'-0"

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: NMG
CHECKED BY: KZS
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\SB_MST_BR3160_063_700_Light_Post.dgn

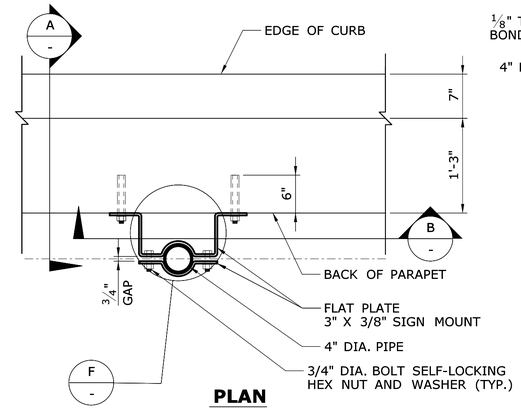
SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
**REHBILITATION OF BRIDGE NO. 1765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

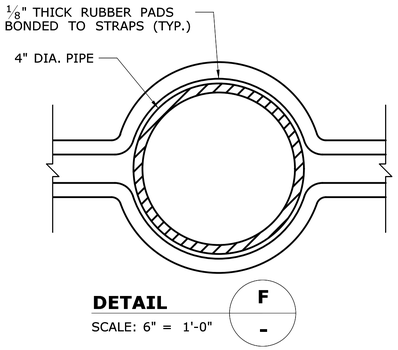
TOWN: **HARTFORD**
DRAWING TITLE: **LIGHT STANDARD ANCHORAGE ADAPTER**

PROJECT NO. **63-700**
DRAWING NO. **S-39**
SHEET NO. **02.04.39**



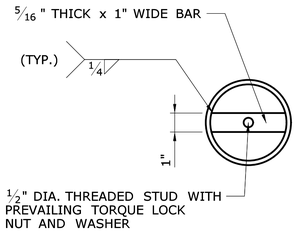

**PLAN**

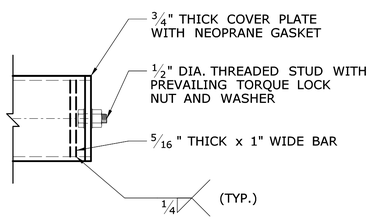
SCALE: 1" = 1'-0"




**DETAIL** F

SCALE: 6" = 1'-0"



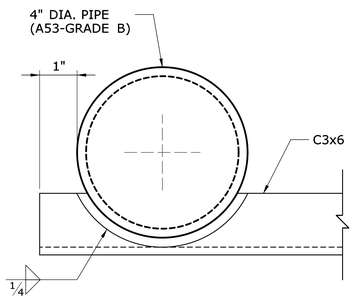




**DETAIL** G

SCALE: 3" = 1'-0"

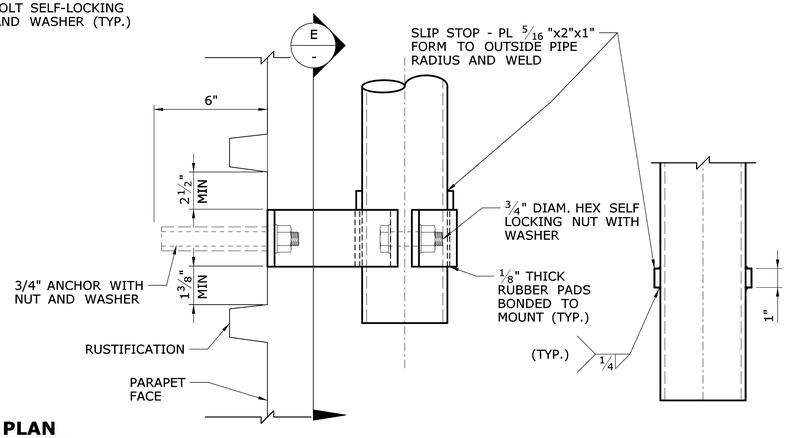
## NOTES:

1. DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2014, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL, 2003 AND AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 2015.
2. STRUCTURAL STEEL SHAPES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270 GRADE 50T2. STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B OR ANSI A501. HOT DIPPED GALVANIZED.
3. HIGH STRENGTH BOLTS, HEAVY HEX LOCK NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325, TYPE 1. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A153.
4. SIGN PANEL ATTACHMENT BOLTS SHALL BE STAINLESS STEEL AND CONFORM TO THE REQUIREMENTS OF ASTM A193 CLASS 2 GRADE B8. NUTS SHALL CONFORM TO ASTM A194 AND WASHERS SHALL BE STAINLESS STEEL AND CONFORM TO ASTM A276 TYPE 304, ANNEALED. THE 3/4" DIAMETER ANCHOR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A449 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
5. RUBBER PADS, 1/8" THICK, SHALL BE BONDED TO ALL SURFACES OF THE STEEL PIPE SUPPORTS (STRAP). THE RUBBER SHALL CONFORM TO THE REQUIREMENTS OF ASTM D4637, TYPE II. THE ADHESIVE BONDING AGENT FOR ATTACHING THE RUBBER TO THE STRAP SURFACE SHALL BE "QUICK GEL INSTANT ADHESIVE" MANUFACTURED BY LOCTITE CORPORATION, NEWINGTON, CONNECTICUT, OR AN APPROVED EQUAL RECOMMENDED BY THE MANUFACTURER OF THE RUBBER.
6. DRILLING HOLES AND GROUTING ANCHOR BOLTS INTO EXISTING PARAPET SHALL BE LOCATED NO LESS THAN 1'-0" FROM PARAPET EXPANSION JOINTS OR PARAFFIN COATED JOINT.
7. PAID FOR AS "PARAPET MOUNTED SIGN SUPPORT", WHICH INCLUDES ATTACHMENT TO THE PARAPET.
8. SEE SUBSET 01.05 FOR SIGN PANEL LOCATIONS.



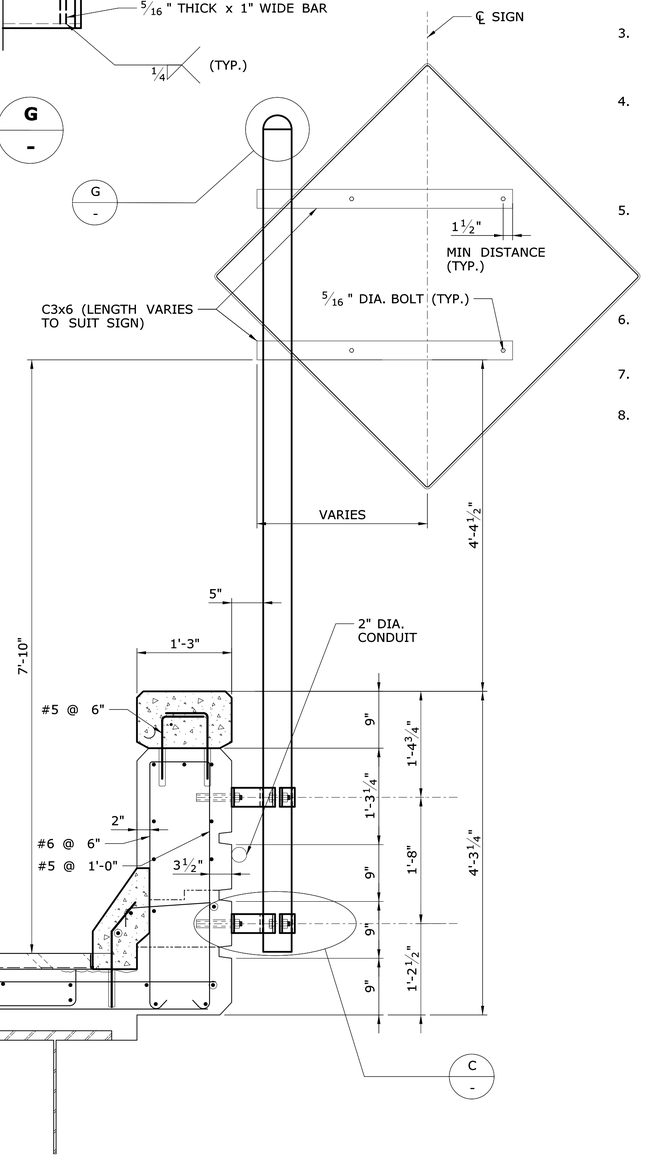

**SIGN ATTACHMENT CHANNEL - PLAN**

SCALE: 6" = 1'-0"



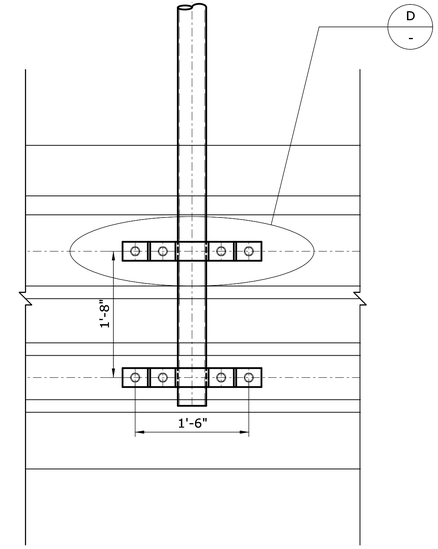

**DETAIL** C

SCALE: 3" = 1'-0"



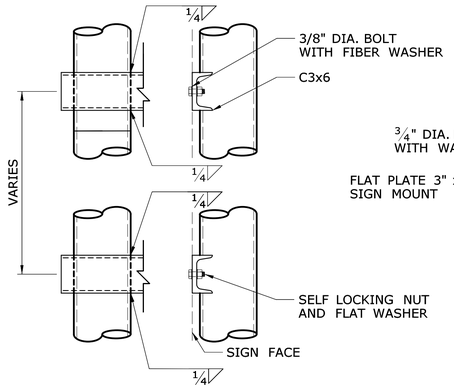

**SECTION** E

SCALE: 3" = 1'-0"




**SECTION** B

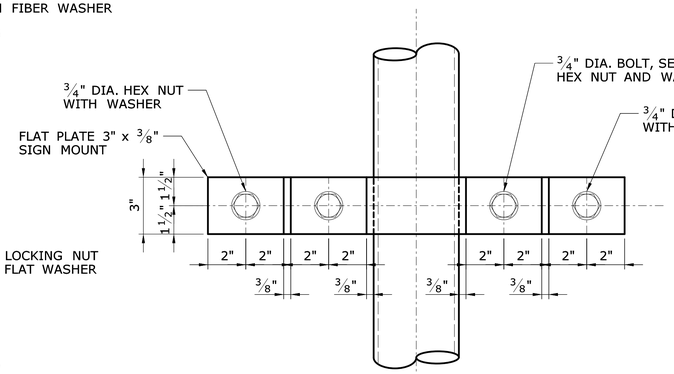
SCALE: 1" = 1'-0"




**FRONT VIEW** **SIDE VIEW**

**CHANNEL ATTACHMENT TO 4" PIPE**

SCALE: 3" = 1'-0"




**DETAIL** D

SCALE: 3" = 1'-0"

**SECTION** A

SCALE: 1" = 1'-0"

| REV. | DATE | REVISION DESCRIPTION | SHEET NO. |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 8/9/2016

DESIGNER/DRAFTER: NMG
CHECKED BY: KZS
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\SB_MST_BR3160_063_700_Sign_Support.dgn

SIGNATURE/ BLOCK:

Hardesty & Hanover, LLC
59 Elm Street
New Haven, CT 06510
Hardesty & Hanover

PROJECT TITLE:
**REHABILITATION OF BRIDGE NO. 1765 I-84 EASTBOUND OVER AMTRAK AND LOCAL ROADS**

TOWN: **HARTFORD**

DRAWING TITLE:
**PARAPET MOUNTED SIGN SUPPORT**

PROJECT NO. **63-700**
DRAWING NO. **S-40**
SHEET NO. **02.04.40**